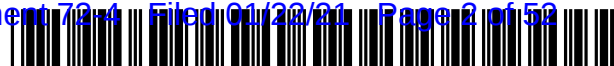


EXHIBIT D

'911 Patent



US010642911B2

(12) **United States Patent**
Weisner et al.

(10) **Patent No.:** **US 10,642,911 B2**

(45) **Date of Patent:** ***May 5, 2020**

(54) **ENHANCING DIGITAL SEARCH RESULTS FOR A BUSINESS IN A TARGET GEOGRAPHIC AREA USING URLS OF LOCATION HISTORIES**

(58) **Field of Classification Search**

CPC G06F 16/951; G06Q 30/02

USPC 709/203-204

See application file for complete search history.

(71) Applicants: **Sholem Weisner**, New York, NY (US);
Shmuel Nemanov, New York, NY (US)

(56) **References Cited**

U.S. PATENT DOCUMENTS

6,321,158 B1 11/2001 DeLorme
6,442,263 B1 8/2002 Beaton
6,832,218 B1 12/2004 Emens et al.

(Continued)

(*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 0 days.

This patent is subject to a terminal disclaimer.

OTHER PUBLICATIONS

Aalto, L., Gothlin, N., Korhonen, J. and Ojala, T. Bluetooth and WAP Push based location-Aware Mobile Advertising System., MobiSys '04, Jun. 6-9, 2004, Boston, Mass., USA.

Primary Examiner — Jason D Recek

(74) Attorney, Agent, or Firm — Mark M. Friedman

(21) Appl. No.: **16/580,041**

(22) Filed: **Sep. 24, 2019**

(65) **Prior Publication Data**

US 2020/0019574 A1 Jan. 16, 2020

Related U.S. Application Data

(63) Continuation of application No. 16/527,037, filed on Jul. 31, 2019, now Pat. No. 10,565,270, which is a continuation of application No. 16/175,880, filed on Oct. 31, 2018, now Pat. No. 10,394,906, which is a continuation of application No. 11/811,165, filed on Jun. 7, 2007, now Pat. No. 10,146,871, which is a continuation-in-part of application No. 11/729,798, filed on Mar. 27, 2007, now abandoned.

(51) **Int. Cl.**

G06F 16/951 (2019.01)

G06Q 30/02 (2012.01)

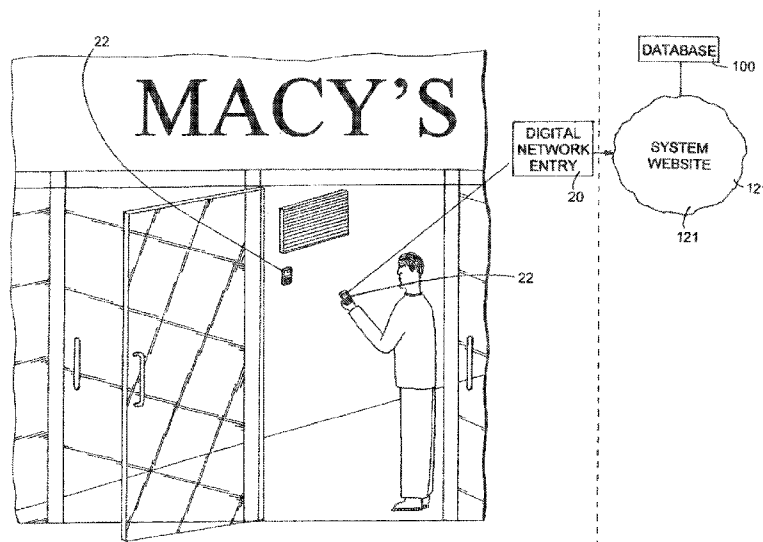
(52) **U.S. Cl.**

CPC **G06F 16/951** (2019.01); **G06Q 30/02** (2013.01)

(57) **ABSTRACT**

A personalized way to digitally record a person's physical activities over time serves web searching, business advertising, nostalgia, security and object tracing purposes. The chronological digital history of the person's physical presence over a time includes (i) digital network entries from other members who hold their portable wireless short range device near the person's device and transmit a URL or other key data and (ii) digital member entries such a digital photograph of a store sign. The digital network entries and digital member entries are automatically transmitted to a database located on a telecommunications network at a time of entry. Advertisers can transmit to members when members enter premises of advertiser's store. Upon sign-up online, the authentication data uniquely associated with an account is provided and key data they want to transmit is associated with the account. Digital histories can be used to improve web searching and networking opportunities.

21 Claims, 10 Drawing Sheets



US 10,642,911 B2

Page 2

(56)

References Cited

U.S. PATENT DOCUMENTS

| | | | |
|--------------|----|---------|----------------|
| 6,976,032 | B1 | 12/2005 | Hull |
| 6,998,985 | B2 | 2/2006 | Reisman |
| 7,191,220 | B2 | 3/2007 | Ohwa |
| 7,693,752 | B2 | 4/2010 | Jaramillo |
| 8,086,605 | B2 | 12/2011 | Xu et al. |
| 8,122,013 | B1 | 2/2012 | Qian et al. |
| 8,566,602 | B2 | 10/2013 | Aaron |
| 9,456,051 | B2 | 9/2016 | Aaron |
| 2001/0039546 | A1 | 11/2001 | Moore |
| 2002/0103865 | A1 | 8/2002 | Lilly |
| 2002/0128905 | A1 | 9/2002 | Gillman et al. |
| 2003/0060212 | A1 | 3/2003 | Thomas |
| 2004/0248569 | A1 | 12/2004 | Kondou |
| 2005/0038876 | A1 | 2/2005 | Chaudhuri |
| 2005/0043990 | A1 | 2/2005 | Powers |
| 2005/0073443 | A1 | 4/2005 | Sheha |
| 2005/0075119 | A1 | 4/2005 | Sheha et al. |
| 2005/0085188 | A1 | 4/2005 | Ishii et al. |
| 2005/0102233 | A1 | 5/2005 | Park et al. |
| 2005/0136949 | A1 | 6/2005 | Barnes, Jr. |
| 2006/0036960 | A1 | 2/2006 | Loui |
| 2006/0039030 | A1 | 2/2006 | Peterschmidt |
| 2006/0071798 | A1 | 4/2006 | Kiff et al. |
| 2006/0085347 | A1 | 4/2006 | Yiachos |
| 2006/0090067 | A1 | 4/2006 | Edmonds |
| 2006/0220879 | A1 | 10/2006 | Chan |
| 2007/0008321 | A1 | 1/2007 | Gallagher |
| 2007/0156446 | A1 | 7/2007 | Jolly |
| 2007/0179356 | A1 | 8/2007 | Wessel |
| 2008/0010131 | A1 | 1/2008 | Bridges |
| 2008/0083825 | A1 | 4/2008 | Yang et al. |
| 2008/0117202 | A1 | 5/2008 | Martinez |
| 2008/0182588 | A1 | 7/2008 | Aaron |
| 2008/0248815 | A1 | 10/2008 | Busch |

U.S. Patent

May 5, 2020

Sheet 1 of 10

US 10,642,911 B2

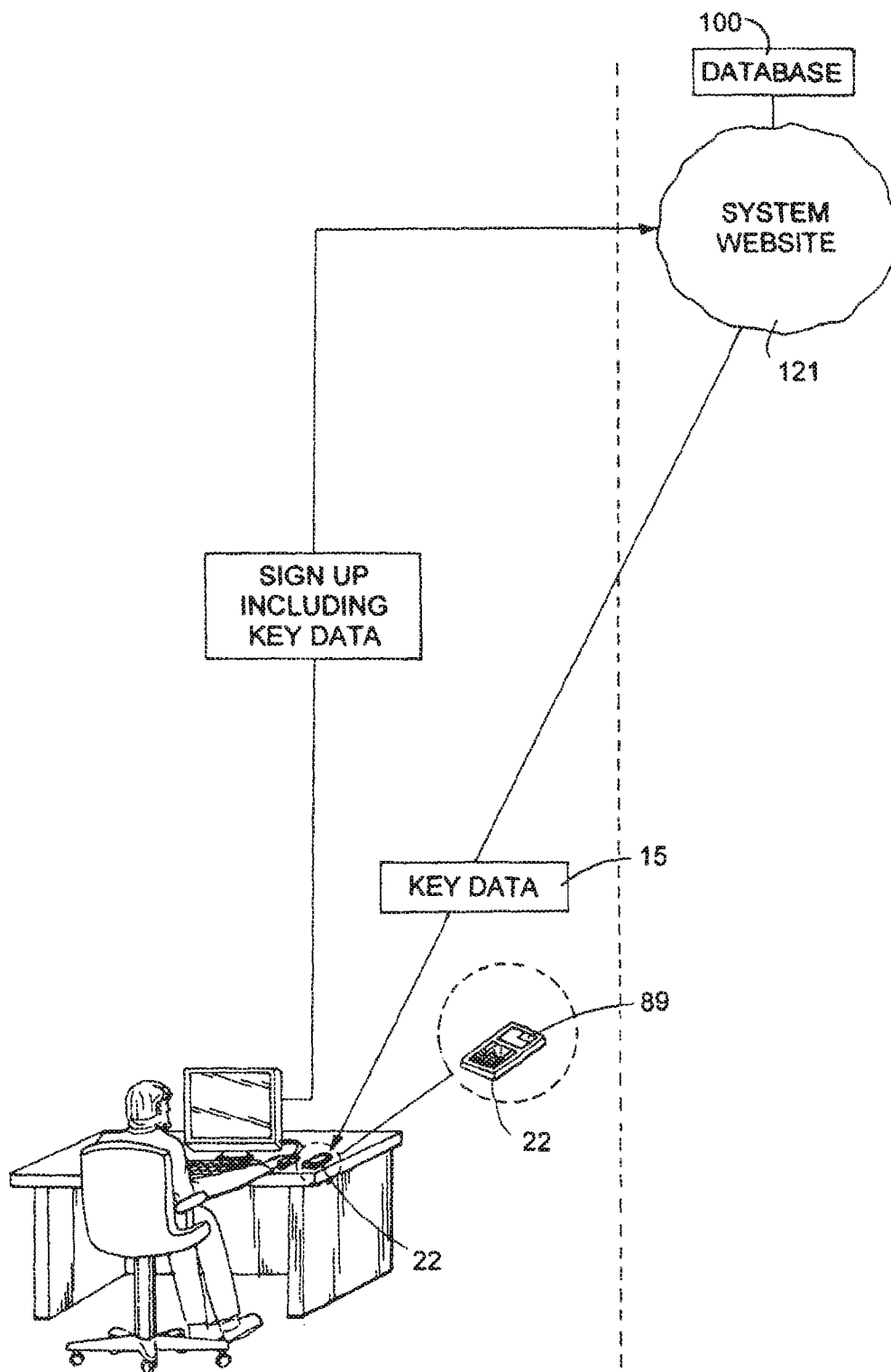


FIG. 1

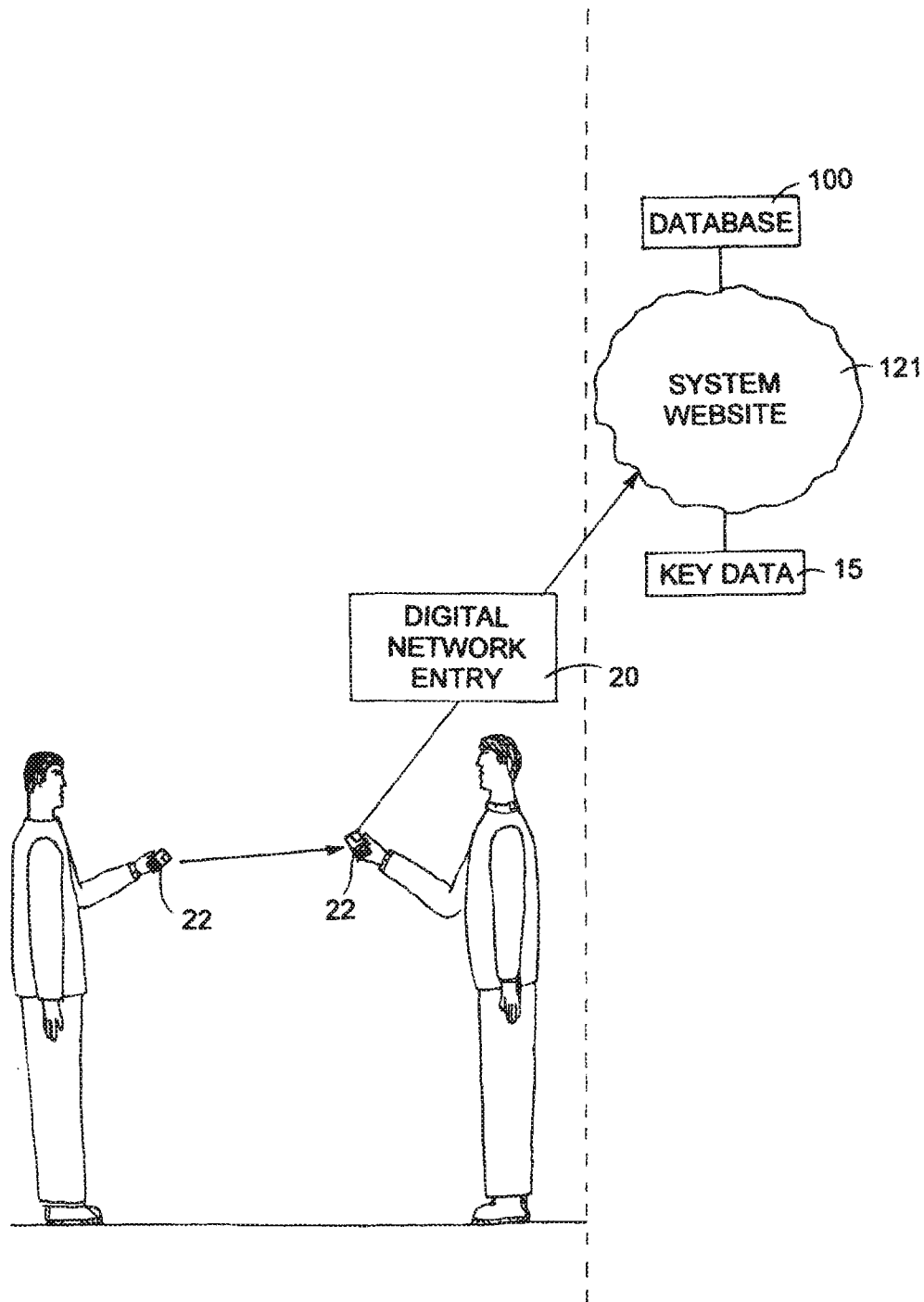


FIG. 2

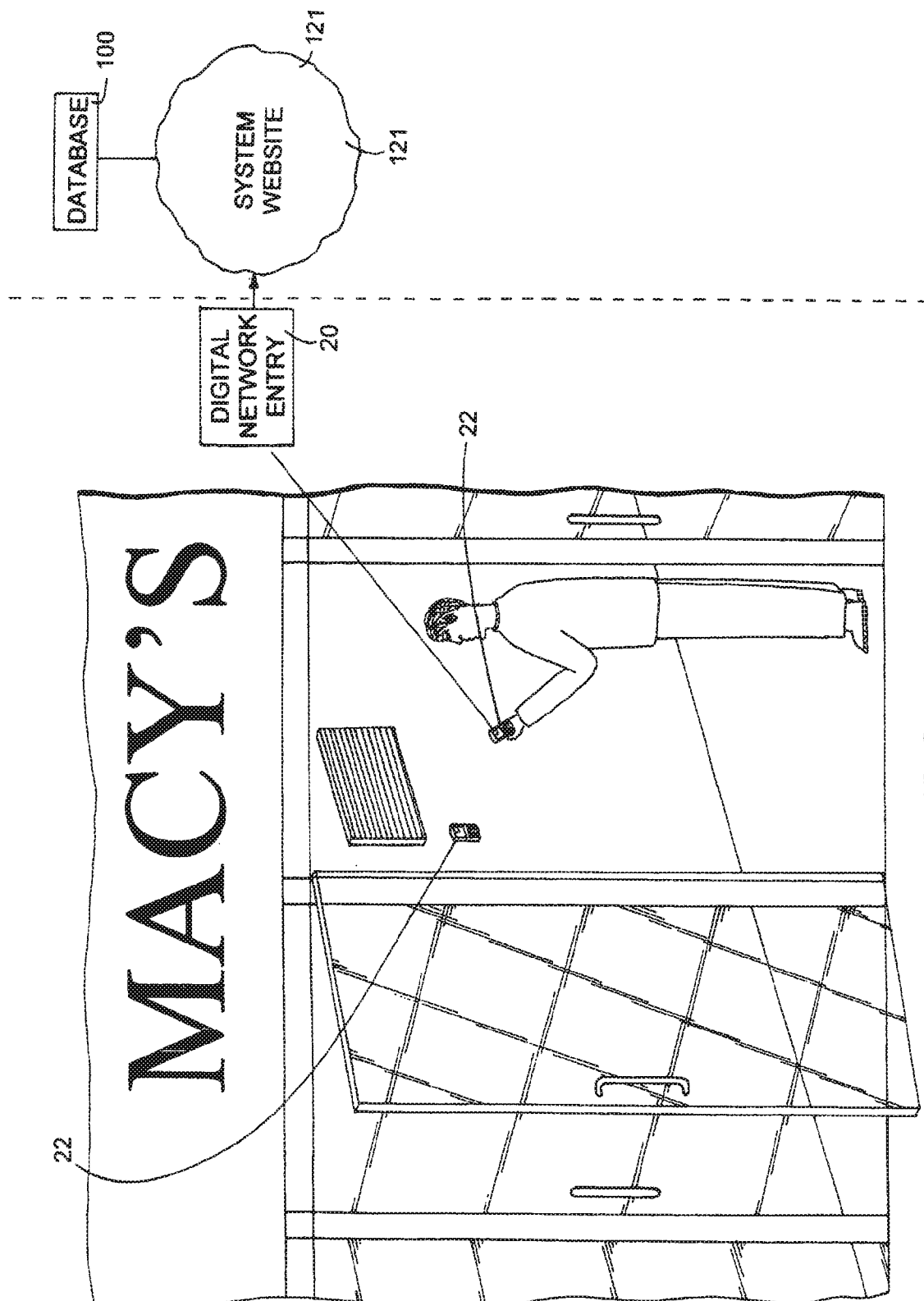


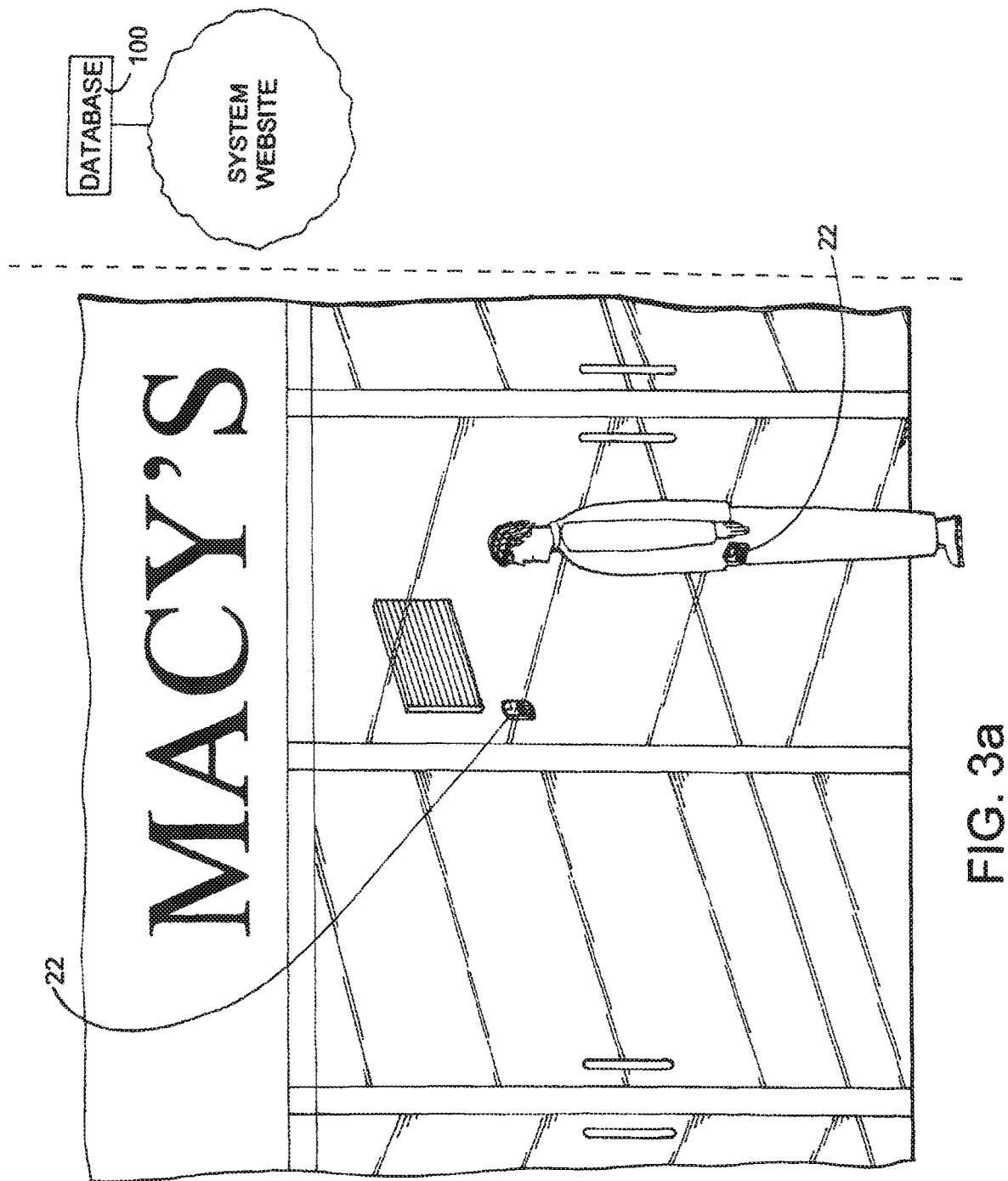
FIG. 3

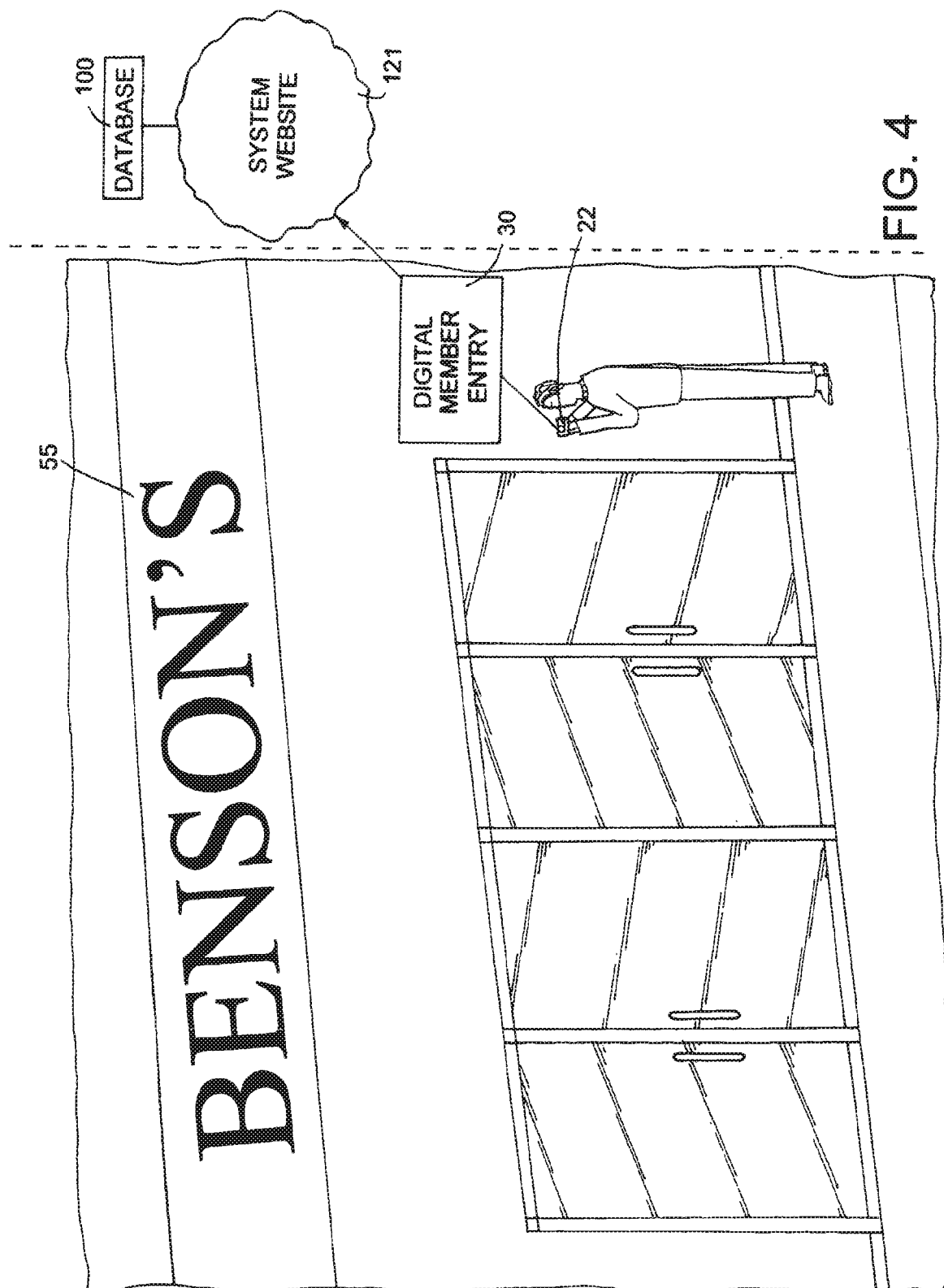
U.S. Patent

May 5, 2020

Sheet 4 of 10

US 10,642,911 B2





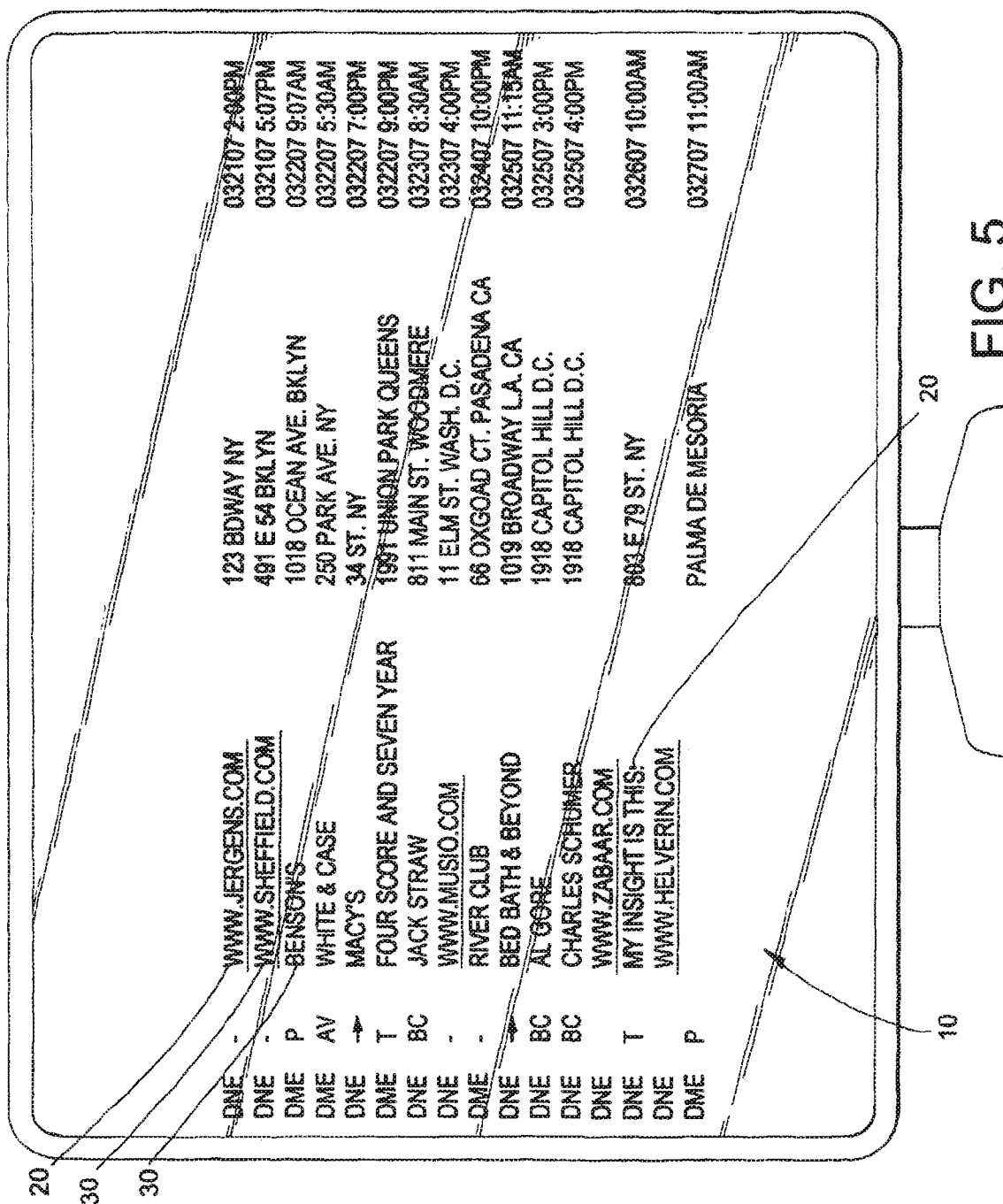


FIG. 5

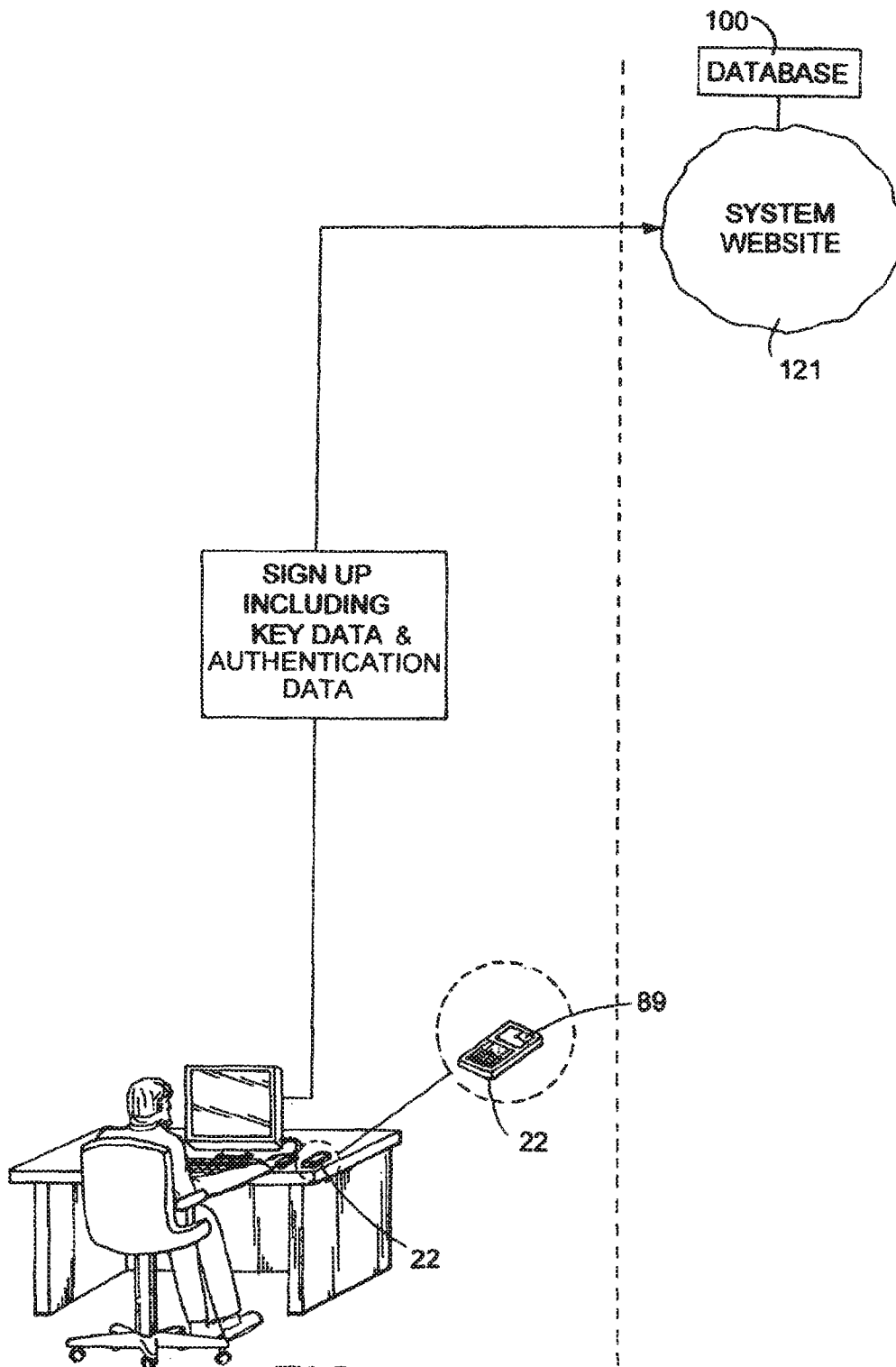


FIG. 6

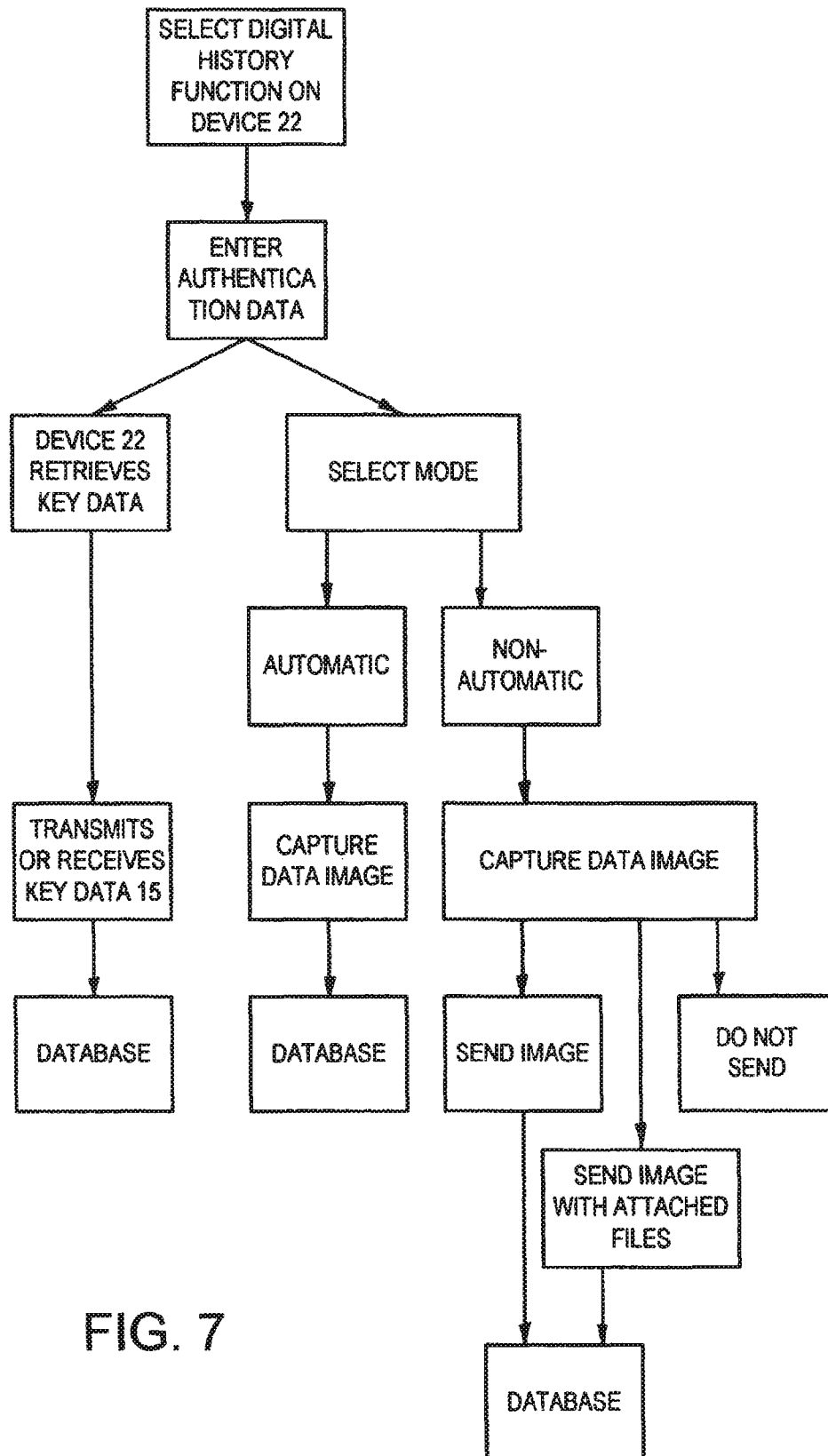


FIG. 7

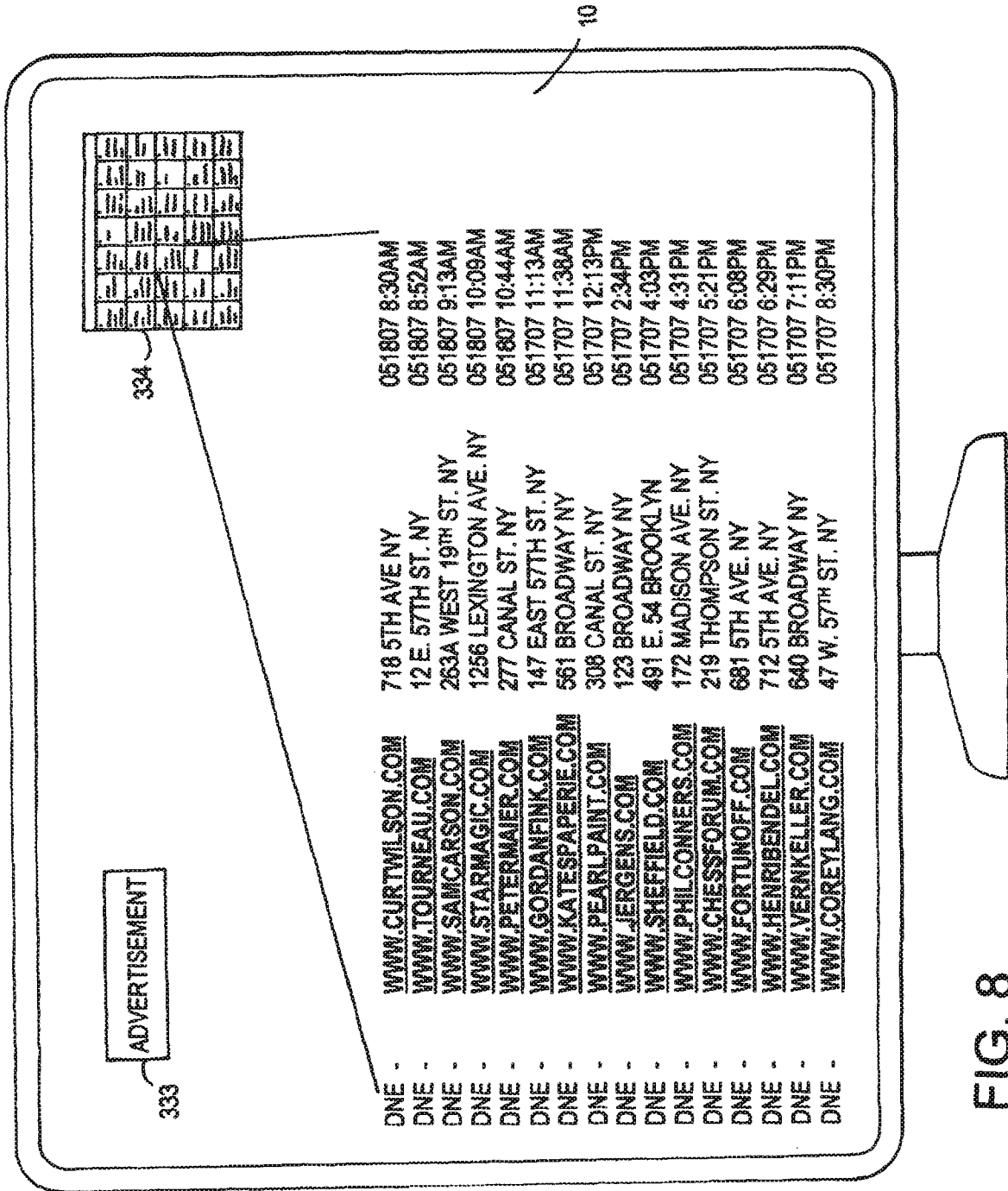


FIG. 8

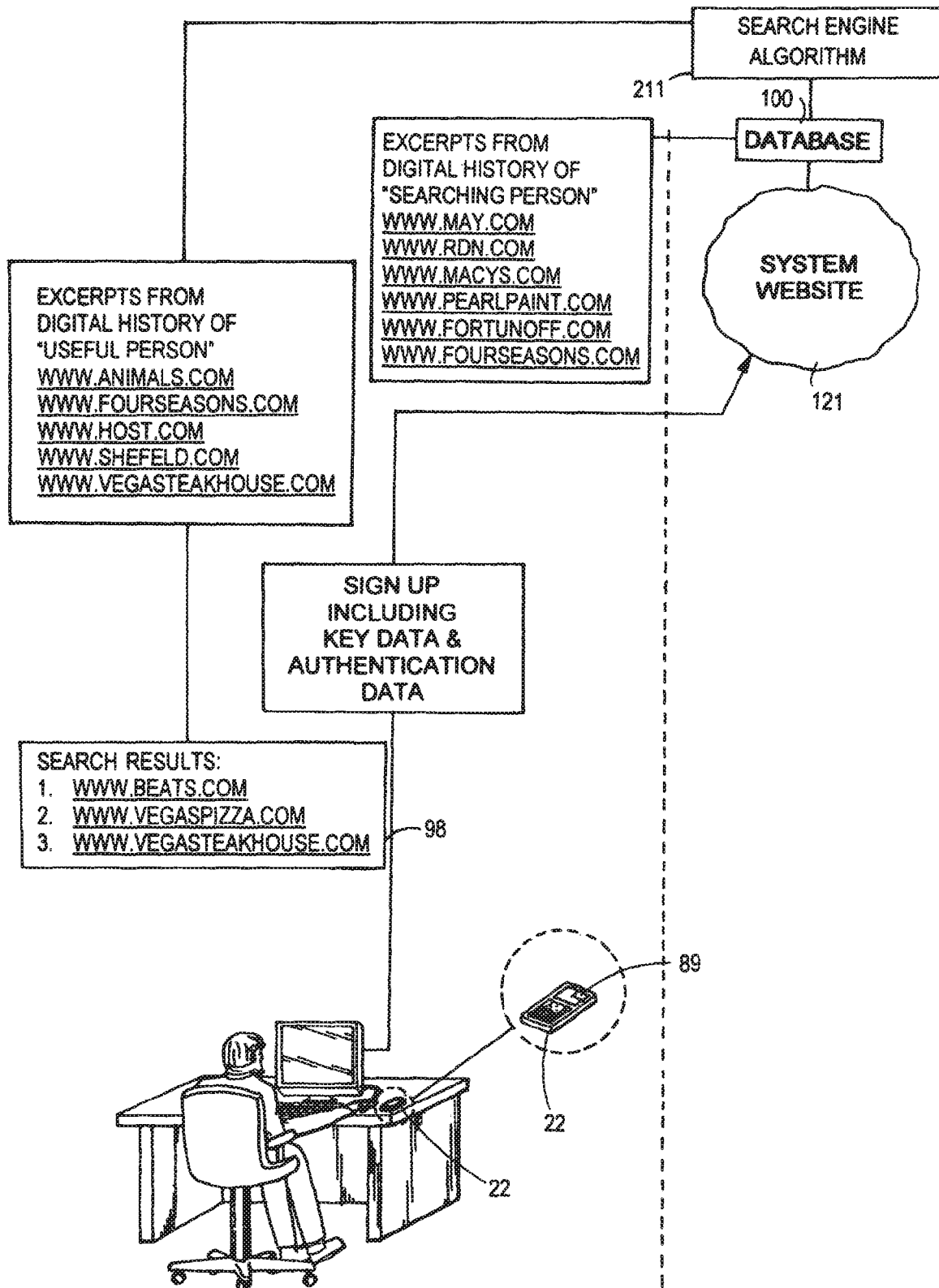


FIG. 9

US 10,642,911 B2

1

ENHANCING DIGITAL SEARCH RESULTS FOR A BUSINESS IN A TARGET GEOGRAPHIC AREA USING URLS OF LOCATION HISTORIES

FIELD OF THE INVENTION

The field of the present invention is the accumulation of a digital record of a person's physical presence across time, i.e. a "leg history", and more particularly, such a digital leg history that includes data from members of a network as well as data from images obtained unilaterally by the person.

BACKGROUND OF THE INVENTION AND DISCUSSION OF THE PRIOR ART

When a person/user surfs the world wide web, the user's browser maintains a surf history. For example, AOL® has an arrow next to the URL window that when clicked opens up a drop-down menu of previously visited web sites. Internet Explorer® has a more extensive search history feature that allows you to see all sites visited by someone at the computer on a certain date as well as a list of the most visited sites. It allows the user to search the list of sites. These surf histories or lists of previously visited web sites are lists of places that exist only in cyberspace and which the user has visited. Also, often the sites visited are gigantic sites that tens of millions of people visit per day or week and hence do not characterize the life of the person very much. Knowing that a person visited google.com no more tells you about that person's personality, life, uniqueness than would knowing that the person passed through a major intersection in Manhattan. Consequently, surf history lists cannot be said to meaningfully characterize the life of the user during a particular period of time. It could not provide a person reviewing their own history with the satisfaction, nostalgia and practical value associated with a digital leg history that meaningfully characterizes that person's life and past physical activities.

Some of the data that a person may wish to include in his digital leg history is data that exists handily on the electronic transmission device of another person he encounters and concerns that other person. There are also known methods of transferring data objects between portable electronic devices using short-range wireless communication methods, such as described in U.S. Patent Application Publication No. US 2005/0085188 to Ishii et al. entitled Method for Transferring Data Objects Between Portable Devices. The prior art, however, does not disclose using such transmission in the context of an overall digital leg history, especially not in the manner described more fully below.

Although there also exists various ways of recording events in one's life in digital form, see, e.g., U.S. Patent Application Publication No. US 2007/0008321 to Gallagher et al. entitled Identifying Collection Images With Special Events, the prior art does not teach the idea of a digital leg history with the characteristics and advantages described more fully below.

In addition, it is believed that in the not too distant future the distinction between business and individuals may be blurred since everyone will have a URL. This will also blur the distinction between advertisements and URLs since a person or business will be able to simply point a person to its or their URL and the web site located there will function as an advertisement

There is compelling need to have data on the location and activities, past and present, of individuals. Such monitoring

2

for security and police purposes raises "big brother" concerns. Even if such concerns can be met in various ways, empirically people may be severely reluctant to voluntarily submit to such monitoring unless the ability to monitor arose out of natural activities that people enjoyed doing. Accordingly, it is very useful to be able to have a digital leg history that people can use to sit back and review their life history in a novel and interesting way. Furthermore, such a digital leg history would thereby provide a way for security to be enhanced. The security needs of the public are often compelling, particularly since the advent of the global war on terror.

As an adjunct to the need to need to have data on the location and activities, past and present, of individuals and businesses, there is also a related need to have such data on the time and place of data transmissions or transfers.

Another basic need among businesses in society is advertising. Businesses are always looking for new venues in which to advertise. When use of the Internet became commonplace in the late 1990's business advertising on the Internet exploded. A digital leg history that is attractive to users would provide a new venue for businesses to advertise in.

Another problem unrelated to the above, and one that aggravates people, is finding their own possessions after such possessions have been seemingly lost. A person could buy something in a store, go to a doctor's appointment, meet a friend etc. over a period of hours and then realize that they lost an object that they were carrying or a valuable possession and do not have an easy way to figure out where it could be. If they had a clear log of where they had been and when and which people they had met during a defined time interval it would be easier to find lost objects. If the generating of such a log were not time-consuming on the part of the person generating it, it would be particularly useful.

Accordingly, there is a need to have a digital record of a person's past—where they have been physically—that includes people or places that they met that they consider significant enough to record for later use—as well as data transmitted from other members of a network including friends and including business members interested in advertising. There is a need to have such a log whose entries would automatically be transmitted to a database on the Internet. There is a further need to have a digital leg history that is appealing to review, including but not limited to reasons of nostalgia, that can be used to promote public security, that can provide a new venue for business advertisement and that can help track and ultimately find lost objects.

Another problem is that the world wide web and Internet in general have become dominated by large entities such as Google®. It is fair to say that while the Internet and world wide web has successfully connected everyone to everyone else, and this has provided new and great opportunities for smaller business and individuals, it is still fair to say that the world wide web, and in particular the process of searching the world wide web, has become dominated by a few large businesses. There is a need to allow smaller businesses and entities to feature more heavily in importance during web searching. Furthermore, it is fair to say that the process of searching the world wide web does not adequately take cognizance of the unique characteristics and tastes of the searching person. There is therefore a further need to allow

US 10,642,911 B2

3

web searching to better take cognizance of the unique tastes and characteristics of the searching person.

SUMMARY OF THE PRESENT INVENTION

Although accumulated electronically, the present invention is a viewable and updateable digital leg history conveying various kinds of information about where a person has physically been stretching back a day, a month, a year of many years. The entries represent various kinds of data that a person obtained at different points in time. The types of data can be data about the place he is in. It can be data concerning the person he met. It can be data concerning a business he visited. It can be data that another person he met thought was interesting. The data characterizing a place he was at can be in any sensory form. The data concerning people and businesses he met can be contact information, URLs, advertisements or another data. In some case, the people that the person encountered were members of the same network that the person signed up for to obtain this digital history. In other cases, the “people” are businesses that are interested to providing URLs, contact information or advertisements that will sit in the person’s digital leg history and be viewed whenever the person looks at their leg history.

The data captured along the trail of a person’s daily encounters are transmitted or entered electronically and stored in that person’s hand-held electronic device. The data is also simultaneously sent to an online database holding that person’s digital leg history.

A prerequisite of the system is that a manufacturer of electronic devices, i.e. cell phones, will have agreed to install special software 89 into the cell phone or other electronic device allowing it to upload data to a database on the web and to receive and transmit to other such electronic devices preferably using short range wireless communication methods, for example Bluetooth®.

Customers of the system of the present invention then sign up at a web site for a fee and obtain an account with the system. They thereby obtain data receiving privileges. In certain preferred embodiments, they also thereby obtain limited data transmitting privileges, in that they can transmit a URL or an electronic business card to another member of the system. If they want more extensive data transmitting privileges, they pay more under a separate package. In either case, they provide a digital copy of the data that they want to have stored in their cell phone to be transmitted to others. The data can be a business card, a URL, or, under the more extensive data transmitting package a song they like or an insight into a topic they are studying or anything else.

Signing up requires identifying the particular electronic device with its serial number. The system recognizes that device’s right to upload information to the account/databank and the system will also transmit the data that the account holder wanted to transmit to others to the device.

As an individual goes through his day, he may encounter people at meetings that he considers significant enough to record in his leg history. If the two individuals are both members of the system they each take out their cell phones and place them in reasonable proximity to one another. The receiving individual first pushes a button on his or her cell phone to put the receiving person’s phone in receiving mode. Then the transmitting person pushes a button on his or her cell phone causing the data of the transmitter/sender to be transmitted to the receiver’s cell phone. The receiving individual then pushes the same button on his communication device that he pushed before, in order to now store and “accept” the data. In a preferred embodiment, when the data

4

first goes from the system’s web site to the transmitter’s cell phone the data is “coded” so that when the transmitter later transmits it to a recipient, the recipient cannot re-transmit that sender’s data to another member of the network even if the recipient attains or has transmitting privileges

That is one type of entry recorded in the leg history—a digital network entry. Another type of entry—a digital member entry—gets entered into the person’s leg history unilaterally without requiring the activity of another person being a member of the system. For example the account holder takes a snapshot with a digital camera or videos a scene at a park and uploads it to his databank at the system. Vendors and advertisers can as members of the system transmit to members of the network who enter the store (or who are paying at the cashier) data such as contact information or a store URL. In certain embodiments, the person can enter the data into the person’s leg history by simple keyboard while he waits for the cashier.

When the user gets home at the end of his day, he accesses his leg history and sees a list of entries. The types of entries in the leg history are coded—by icon, color or acronym—to indicate whether it is a transmission from another member of the system, whether it is simple contact info such as a URL, whether, it is from a business, whether it is a scene or audio that came from a camera or a tape recorder. It is also time and place stamped. If he enters the item on the list he of course can access the full data transmitted. But the list itself gives him a quick leg history of where he was for any period of time.

in another preferred embodiment, signing up does not entail registering the serial number of the network device used by the member. Rather any network device outfitted with the software of the present invention can be used to access the database containing the digital history of a particular person by providing authentication data uniquely associated with a particular account at the database, which account contains a particular person’s digital history.

In a further embodiment, advertising on a person’s digital history will be possible and can be based on the profile of URLs that the person has in their digital history.

In a still further embodiment, an improved method of searching the world wide web is provided that makes use of digital histories. In one version of this embodiment, a searching person searches a database of URLs for a certain kind of business (in a particular geographic area or of a certain topic category) by means of a search algorithm that considers a plurality of factors in ranking search results of URLs. The search algorithm is given access to the digital histories of persons who are members of the network and the search algorithm or the system controlling the database finds a target business of that kind (in the particular geographic area or of that topic) wherein a URL of the target business appears in a digital history of a useful person who is a member of the network, the digital history of the useful person also including a URL for a second business of the same kind located in a second geographic area (or a second business of a second kind), wherein the searching person has in his digital history the URL of the second business. As a result, the plurality of factors includes an assignment of priority to the URL of the target business.

OBJECTS AND ADVANTAGES

The following objects and advantages may be present in certain embodiments of the present invention:

US 10,642,911 B2

5

(1) to provide a method and apparatus for the accumulation of a digital history of the person's physical presence over time;

(2) to provide such a method and apparatus that serves a nostalgia purpose in that it allows a person to view digital lists or records of where they have been at various points in time during their life;

(3) to provide such a method and apparatus that also provides a police and public security function by keeping track of a person's physical presence in detail;

(4) to provide such a method and apparatus that also provides a police and public security function by keeping track of the physical presence of a population of persons in detail;

(5) to provide such a method and apparatus as in Object and Advantage "(3)" that benefits the person and thereby encourages the person to maintain the digital history;

(6) to provide such a method and apparatus that also allows a person to trace and find lost objects by allowing the person to identify and then check places that he may have left the object at during a certain most recent time interval;

(7) to provide such a method and apparatus that also serves the function of allowing a business to advertise itself on the digital history thereby creating a new venue for business advertising;

(8) to provide such a method and apparatus as in Object and Advantage "(7)" that allows the business to have an entry in the digital history which functions as an advertisement for that business;

(9) to provide such a method and apparatus as in Object and Advantage "(8)" that includes the URL of the business or a more elaborate advertisement;

(10) to provide a method and apparatus for the accumulation of a digital history of a person's physical presence over a period of time that combines (a) digital network entries received from a member of the network by close-range transmission using network communication devices and (b) digital member entries by the person himself of things the person perceived, i.e. saw, heard, touched, smelled and/or tasted, and that he considered significant;

((11) to provide such a digital history as in Object and Advantage "(10)" wherein the close-range transmission occurs between hand-held communication devices such as cell phones;

(12) to provide such a digital history wherein data is transmitted from the network device of a member of the network to the network device of the person after the person inputs a cue on the person's network device to receive data and wherein after transmission of the data the person inputs a cue to receive said data;

(13) to provide such a digital history wherein digital network entries automatically include a viewable recordation of time and place of entry and wherein digital member entries automatically include a viewable recordation of time and place of entry, the place of entry information coming from a global positioning system that the person is in communication with;

(14) to provide a method and apparatus that would allow a person to sit at home and easily review and relive important moments of their life;

(15) to provide a method and apparatus of capturing important moments in a person's life;

(16) to provide a method and apparatus that allows a person to capture, access and relive important moments or periods of the person's life in the form of a digital "leg" history;

6

(17) to provide to provide a method and apparatus that allows a person to capture, access and relive important moments or periods of the person's life in the form of a digital "leg" history and that simultaneously provides a format for businesses to advertise within the digital "leg" history;

(18) to provide a method and apparatus for the exchange of electronic business cards;

(19) to provide a method and apparatus for the exchange of URLs;

(20) to provide a method and apparatus for the exchange of URLs that can include the URLs of businesses;

(21) to provide a method and apparatus as described in the above Objects and Advantages in which the digital network entries and the digital member entries are automatically transmitted to a database located on a telecommunications network (such as a global telecommunications network) at the time of entry,

(22) to provide a method and apparatus as described in Object and Advantage "(20)" wherein access to an entire collection of the digital history for viewing thereof can be accomplished by the person by accessing the database;

(23) to provide a method and apparatus for a digital "leg" history that includes entries from vendors or businesses who are members of the network, said entries occurring when a person who is a member of the network enters the premises of the vendor or business and receives an automatic electronic transmission from pre-placed network communication devices located at entrances to said premises;

(24) to provide a method and apparatus as per Object and Advantage "(23)" wherein the person chooses whether to accept the transmission from the vendor or business upon entry into the premises;

(25) to provide a method and apparatus for a digital history of a person over time which requires the person to sign up with a network, for example, at a web site;

(26) to provide such a method and apparatus of a digital history wherein when you sign up you have the option of providing data that would be sent to your network communication device, such as a cell phone, which upon encountering another member of the network can be transmitted to said other member;

(27) to provide such a method and apparatus for a digital history as per Object and Advantage "(26)" wherein said data can include such things as an electronic business or a URL;

(28) to provide such a method and apparatus for a digital history as per Object and Advantage "(27)" wherein said data can also include anything important to the person such as a song that they like or an insight into a topic they are studying;

(29) a method and apparatus of a digital "leg" history wherein in certain alternative embodiments, when the person signs up with the network the person has the option of allowing advertisers or a select subset of advertisers to automatically send advertisements into your digital history;

(30) a method and apparatus of creating a digital representation of a person's past;

(31) a method and apparatus of creating an updateable digital representation of a person's past;

(32) to provide a method and apparatus for a digital "leg" history wherein entries in the leg history, particular digital network entries, can be just a URL alone, such that when the person reviews the digital history, the person can make a single click on the URL and automatically be taken to the member's web site associated with that URL;

US 10,642,911 B2

7

(33) to provide a new method and apparatus for organizing information about a person;

(34) to provide a new method and apparatus for organizing and reviewing information about a large group of people;

(35) to provide a digital leg history that through continuous daily updating can transform the daily leg history into a monthly, a yearly and a decade or longer leg history;

(36) to provide a digital leg history that is not difficult or time-consuming to accumulate;

(37) to provide a new way to organize information that is important to a person;

(38) to provide a method and apparatus that combines the interests of advertisers and of ordinary potential consumers;

(39) to provide a method and apparatus for a digital leg history that uses a global position system to trigger the recordation of time and place based upon a person's data entry or data transfer;

(40) to provide a method and apparatus for a digital leg history that is accumulated effortlessly in the sense that it is incidental to data tasks that would otherwise be performed anyway;

(41) to provide a method of serving advertisements to a person based on the URL profiles of the person whose leg history it is;

(42) to provide a method and apparatus of a collection of URLs forming part of the leg history of the present invention such that advertisers serve advertisements in the leg history based on the nature of these URLs;

(43) to provide a method of using digital histories to improve web searching by identifying a "useful business" in accordance with one embodiment of the present invention;

(44) to provide a method of using digital histories to enhance web searching through enhancing networking opportunities;

(45) to provide a method of using digital histories in web searching that has the effect of elevating the importance of smaller companies and entities relative to larger business and entities within the world wide and web and Internet; and

(46) to provide a digital leg history whose entries are in chronological order.

BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a simplified schematic diagram in accordance with the method and apparatus of the present invention showing a member signing up and providing key data, which data is then transmitted to the member's cell phone;

FIG. 2 is a simplified schematic diagram of an encounter between two members of the network that generates a digital network entry into the leg history of one of the members in accordance with the method and apparatus of the present invention;

FIG. 3 is a simplified schematic diagram showing an individual member of the network entering the premises of a vendor member of the network and accepting a transmission from the vendor's pre-positioned device that generates a digital network entry in the digital leg history of the member in accordance with the method and apparatus of the present invention;

FIG. 3A is a simplified schematic diagram of a member adjacent a second entrance to the premise of the vendor member of FIG. 3;

FIG. 4 is a simplified schematic diagram of a situation where a member photographs a store sign to generate a digital member entry into the leg history of a member in accordance with the apparatus and method of the present invention;

8

FIG. 5 is a screen page in the digital leg history of a member displayed on a computer screen of a PDA or other electronic device of a member in accordance with the apparatus and method of the present invention;

FIG. 6 is a simplified schematic diagram in accordance with the method and apparatus of the present invention showing a member signing up and providing key data;

FIG. 7 is a flow chart for the second preferred embodiment covering the steps leading to a digital network entry or a digital member entry in accordance with the present invention;

FIG. 8 is a digital history of the present invention containing only URLs and appearing in the "monthly calendar" embodiment; and

FIG. 9 shows the method of searching for businesses of a certain kind in a certain geographic area using the digital histories of the present invention to identify a "useful person" in accordance with one embodiment of the present invention.

DETAILED DESCRIPTION OF THE PREFERRED EMBODIMENT

The apparatus and method of the present invention will now be illustrated by reference to the accompanying drawings. The apparatus of the present invention has been assigned reference numeral 10. Other elements have been assigned the reference numerals referred to below.

As seen from FIGS. 1-5, apparatus 10 is a viewable and updateable digital history 10 of a person's physical presence over a time. It is a chronologically arranged collection of viewable entries on a computer or other viewable electronic device. The collection includes various types of entries, which can be divided into general categories. Each category of entries has preferably numerous entries in the category. In an alternative embodiment, there can be only one entry in a particular category.

In order for any entry in the digital leg history to occur, the system has to first be set up. A manufacturer of electronic devices such as cell phones has to have agreed to install software 89, whose content is known to those skilled in the art of computer science, into the cell phone or other device allowing it to upload data to a database on a global (or smaller) telecommunication network such as the world wide web and to receive and transmit wirelessly to other such devices, for example known short range wireless communications methods such as Bluetooth®. Such software 89 can be readily developed or is already known to those skilled in the art.

When the present invention refers to cell phones as an example of a handheld electronic network device 22, it should be understood that the present invention specifically contemplates other such electronic devices that could carry the software 89 used in the present invention. For example, network device 22 can include any other handheld electronic device that is typically carried around by people during their day including iPods, cellular telephones, personal digital assistants, small laptop computers media players including video and/or game players, possibly digital cameras, Internet terminals, and GPS and remote control devices. In certain embodiments, it could also include bar code scanners. It can also include multi-function electronic devices that incorporate the functionalities of all or combinations of these devices. In addition, vendors may utilize electronic devices that are at the entrances to their premises, as explained more fully below. In such a case, the device 22 need not be handheld and could be a computer.

US 10,642,911 B2

9

In a preferred embodiment, customers of the system of the present invention sign up at a web site **121** for a fee and obtain an account with the system, thereby becoming a member of the network. In certain other preferred embodiments, no fee will be charged. By signing up the members thereby obtain data receiving privileges. They also thereby obtain limited data transmitting privileges, in that they can transmit their URL (or other basic contact information) to another member of the system. If they want more extensive data transmitting privileges, they pay more (or enroll without paying in certain embodiments) under a separate package. In either case, they provide a digital copy of the data that they want to have stored in their cell phone to be transmitted to others. This data is sometimes referred to herein for convenience as “key data” **15**. The key data **15** can be a business card, a URL, or, under the more extensive data transmitting package, key data **15** can be a song they like or a discussion of a topic they are studying, or it can be anything else that the member considered significant enough to be transmitted later. In certain alternative embodiments, key data **15** is limited to URLs, or in other embodiments, limited to URLs, electronic business cards and business advertisements.

In a preferred embodiment, key data **15** can be updated by the member after the member has signed up by accessing the database **100** at web site **121**. Accordingly, the member is not limited to having their digital network entries **20** be fixed forever. In one preferred embodiment, signing up requires identifying the particular electronic device with its serial number. The system recognizes that device’s right to upload data entries to the account/databank. At the beginning, the system also transmits the key data **15** to that device. The cell phone or other device thereby becomes a network communication device.

In a second more preferred embodiment depicted in FIGS. **6-8**, the network device **22** is not registered upon sign up. Rather, any network device can be used by any member of the system provided it has software **89** in it. Upon sign up for the system, a member selects a user name and password that will be uniquely associated with his account on the database **100**. Alternatively, the new member of the network provides some other authentication data which is uniquely associated with his particular account.

Software **89** in device **22** allows a user to interact with his account at database **100** using device **22**, including accessing and retrieving key data **15**, and processes digital network entries **20** and digital member entries **30**. Making use of software **89**, the user interfaces with device **22** so as to navigate to or select the leg history function within device **22**. Software **89** in the network device **22** will then prompt the user of the device **22** to enter authentication data uniquely associated with his user account on the database **100**. Upon entry of this authentication data, the network device wirelessly connects the operator of the device **22** to the account at system database **100** associated with that authentication data. This allows the person controlling device **22** to access or transmit data to the digital leg history **10** for that account.

Accordingly, anyone who enters a certain user and password or other authentication data will have the ability to send digital network entries and digital member entries to the digital leg history of the member whose authentication data was provided. Among other things, this would allow a network device to be borrowed by a friend who wishes to send his (the friend’s) digital member entry to his (the friend’s) digital leg history. Furthermore, if the network device were stolen or entered the possession of the wrong

10

person, such person could not send data to or alter the digital leg history of the proper owner.

In this second preferred embodiment, upon signing up with the system, key data **15** is still provided. But the key data **15** is not tied to any particular network device **22** and is not automatically transmitted to the network device **22** of the accountholder. Hence, signing up does not trigger key data **15** being transmitted to any network device **22**. Software **89** in device **22** is such that entry of authentication data into device **22** causes device **22** to communicate with the appropriate account at database **100** and “know” that a particular key data **15** is associated with the accountholder that was authenticated. Accordingly, if the member wishes to generate a digital network entry **20**, device **22** then transmits that key data to another member at short range for entry into the leg history of the recipient individual using the short range communication method described above, including for example by holding their devices **22** facing each other and transmitting/receiving.

In this second preferred embodiment, preferably when a member transmits digital network entries **20** between his device **22** and a network device **22** of some other member of the network at short range, if the authentication data has not already been entered, then it must be entered prior to the transmission. In an alternative embodiment, the transmitted key data is stored in device **22** but then to enter the data into the leg history the authentication data must be entered after receipt of the transmission.

Likewise, as shown in FIG. **7**, after entering authentication data, if the member wishes to capture a sensory image for entry of a digital member entry **30** into leg history **10**, in a preferred embodiment, the user/member selects automatic mode or non-automatic mode. In automatic mode any sensory image captured by device **22** is automatically forwarded to database **100** as a digital member entry **30**. In non-automatic mode, upon the capture of a sensory image as data into device **22**, a window or other prompt opens up and prompts the user to (i) transmit the image to the database **100** for entry into leg history **10** as a digital member entry **30**, (ii) not transmit the image to database **100** or (iii) to transmit the image along with an attached file or an attached note of the member.

The first type of entry in the digital history **10** is digital network entries made by a person who has signed up and is a member of a network. The digital network entries **20** can occur at any point in time after signing up. As an individual goes through his day, he may encounter people and may consider the encounter significant enough to record in his digital leg history or he may consider the data transmitted from the person he met significant enough to be recorded in his digital leg history. The digital network entries **20** are comprised of various kinds of data that was transmitted from a network device **22** of some other member of the network to the network device of the person whose digital leg history is being formed. In a preferred embodiment, digital network entries are transferred at short range using wireless communication methods. This is illustrated more fully below and in FIG. **2**. The definition of “short range” or “proximity” would vary depending on the technical specifications of the wireless transmission. Purely by way of illustration, in one preferred embodiment, “proximate” can mean twenty feet or less.

If the two individuals are both members of the system and are close enough to one another they each take out their cell phones or other electronic communication devices and if required by the wireless communication method position them so that they face one another, as shown in FIG. **2**. The

US 10,642,911 B2

11

exact transmission mechanism can occur in a number of ways, and the present invention is not limited to one particular method or the exact illustration shown in FIG. 2. In one preferred embodiment, the receiving individual first pushes a button on his or her cell phone to put the receiving person's phone in receiving mode. Then the transmitting person pushes a button on his or her cell phone causing the data of the transmitting person to be transmitted to the receiver's cell phone or device. The receiving individual then pushes the same button on his cell phone that he pushed before and he thereby stores and "accepts" the data. This automatically also transmits the data to the system web site and online database 100 storing the digital leg history. Alternatively, a separate button has to be pushed to transmit to the database.

This is a general description of digital network entries, which is one type of entry recorded in the leg history 10. Another type of digital network entry 20, and one which offers big advantages in business advertising, involves vendors who are members of the network. Stores will recognize the value of getting into your digital leg history 10 at database 100, the way they recognize the value of being in the newspapers you read or the web sites you visit. So if you encounter a store or other business and the store is part of the network, one way it can transmit to you data is by placing transmitting devices near each store entrance.

As shown in FIG. 3, the minute you enter the store your electronic communication device, such as a cell phone, receives a message or signal from the store's pre-positioned transmitting cell phone or other transmitting device near any of the entrances of the premises. The data that the store is proposing to transmit to you is the store's electronic business card, the store's URL or other an advertisement or promotional information from the store. It would be key data 15 that the store, as a member of the network, previously provided to an account at database 100. Again, purely by way of an illustration of one preferred embodiment of the manner in which the transmission would take place, if the member who receives a signal from the vendor member or store then hits the button on his cell phone to accept and store the information, the data is transmitted, stored and automatically sent to the database 100 on the system web site at the member's account at database 100 that holds the digital leg history (e.g. 10A) of the individual member. FIG. 3A shows that the store has other pre-positioned electronic communication devices at other entrances to its premises.

Although the drawing figures show database 100 as being located at a system web site, the present invention also contemplates database 100 being located remote from network device 22 held by the member at any telecommunications network. Typically, said telecommunications network would be a global network such as the world wide web, although it does not have to be.

In certain alternative embodiments, the store personnel approach store customers who entered the store and offer to transmit a digital network entry containing the store URL, contact information, advertisement or promotion. In a further alternative embodiment, the member types in or otherwise inputs the name of the store while he is paying at the cashier.

In certain alternative embodiments, when you sign up with the system you can choose to allow businesses in a particular industry to have the right to transmit proposed advertising to your digital leg history at any time. This is an alternative embodiment, since it may be too invasive, although controls can be added to moderate the invasiveness. For example, the member can set their digital leg

12

history to a mode that does not accept any such advertising or there can be option to delete all advertising that came into the leg history other than data that was transmitted when the person was physically present in the premises of the business.

The present invention also envisions having the digital network entries and the digital member entries coded to allow the user to instantly recognize the type of entry it is even while reviewing the digital leg history itself. One type of coding can be color codes. Another type of coding can be icons adjacent the beginning of the title of the entry. A further type of code can be an acronym—"BC" for a text or art consisting of an electronic business card, "T" for text, "AV" for audiovisual, "P" for photograph, "DNE" for digital network entry, "DME" for digital member entry. The "T" may indicate that there is a significant amount of text (i.e. a song) rather than one line of a URL or three lines of contact information. The acronyms can be stylized and/or can incorporate an icon. As can be seen from the acronyms, the codes can distinguish between digital network entries and digital member entries. The codes can also distinguish between different types of digital member entries—audio, visual, audiovisual, etc.

In a preferred embodiment, when the data first goes from the system's web site to the transmitter's cell phone the data is "coded" in any manner known to those skilled in the art so that when the transmitter later transmits it to a recipient, the recipient cannot re-transmit that sender's data to another member of the network even if the recipient attains or has transmitting privileges.

As previously noted, network device 22 should have short range wireless capability to be able to receive and transmit data or various times (text, video, audio, etc.) to and from other members of the network. In addition, device 22 should be able to transmit data wirelessly to the database 100 on the world wide web.

The second type of entry in digital leg history 10 is one or more digital member entries 30. These entries are entries that are made unilaterally at any point in time by the person whose digital leg history it is. The member entries arise when the person perceives something where he is (i.e. where his legs are) and decides to capture it and incorporate it into his digital leg history. The data that forms the digital member entry 30 can be any a digital representation of any sensory image perceived by the member at a point during the time that the digital leg history covered. By definition, the data would be something that the member considers significant enough to enter into his leg history. In contrast to the digital network entries 20 the digital member entries 30 that get entered into the person's leg history are unilateral—they do not require receiving anything from another person who a member of the network/system.

A simple example of a digital member entry 30 occurs when the member is carrying a digital camera and decides to take a photograph of something. It is noted that the digital camera we are speaking of would be one that has the capability to upload data to a database on a global telecommunications network such as the Internet. Applicant is not aware of whether such a digital camera exists presently on the market at present. In either case, the technology certainly exists for incorporating wireless transmitting capability into a digital camera, if only by conjoining a digital camera with a cellular telephone, a PDA, IPOD® or other electronic device.

In certain embodiments, another example of a digital member entry 30 (not shown in the digital leg history 10 depicted in FIG. 5) can occur when a member can enter text

US 10,642,911 B2

13

into network device **22** whether manually or otherwise and thereby record the time and place of their intellectual advancement. Preferably, the “time” means the calendar date and the time or it can mean the date alone or the time of day alone. The text can be a sudden insight into a study topic, for example. This is particularly important for creative people or people who study all day long, i.e. researchers or students of religious texts.

Suppose the member wants to record all the places he will go to in a long afternoon of errands and store visits. He wants to record that he went into a particular store and enter it into his leg history. After he leaves the store he positions the camera and takes a photograph of the sign **55** in the front of the store (or any other distinguishing feature of the store that reminds him of the experience of going into that store). As shown in FIG. **4**, the photograph of store sign **55** is automatically transmitted to database **100** for entry into the digital leg history **10** as a digital member entry **30**. In a preferred embodiment, as shown in FIG. **5** the photograph is coded to indicate that it is a photograph by having the name of the store preceded by the letter “P” in iconic or stylized fashion.

The reason that iconic or stylized codes are used to describe the types of digital member entries **30** and digital network entries **20** is that when the member accesses and reviews his or her digital leg history **10**, see e.g. FIG. **5**, the member does not see all the data on the initial screen. The screen shown in FIG. **5** is merely the initial screen of the list of entries comprising the digital leg history **10**. The member then has the ability to call up the full entry by clicking on or otherwise selecting that entry seen on the screen. For the benefit of obtaining an overview of the entries in the digital leg history **10**, the icons or codes preceding the entry are provided. As can be seen in FIG. **5**, the places are and times of entry are also recorded. The places are obtained from the fact that each device **22** is capable of communicating with and receiving place data from the global positioning system used in the present invention. It is noted that the global positioning device uses a satellite or any other appropriate means known to those skilled in the art.

As shown in FIG. **8**, in one preferred embodiment, the digital history **10** is presented as a monthly calendar **334** broken down by date wherein within each date there is a series of entries (digital network entries and/or digital member entries) substantially in the form as shown in FIG. **8**. Preferably, in this “monthly calendar” embodiment as shown in FIG. **8** the entries on each date in the calendar may be rather small to read. Accordingly, when one clicks on a particular date, say May 18, that date opens a window containing only the entries for that date, which window is large enough to occupy at least a good part of the screen (calendar **334**, preferably, is then viewable in the background). It is noted that although in FIG. **8** URLs are the only entries in the digital leg history **10**, this should not be taken to mean that the monthly calendar embodiment requires this. This is an alternative embodiment combined with the “monthly calendar” embodiment.

As noted, it is believed that in the not too distant future virtually all individuals will have URLs, which constitute a form of advertisement for themselves, and that chance encounters between people will result in the desire to exchange URLs, which in effect involves having people access the world wide web outdoors, the present invention makes use of this important development by using global positioning systems to trigger a recordation of time and place based on a person’s having performed a data transfer or a data entry (at least those that the person considers

14

significant pursuant to the present invention), rather than based on a person’s simply being somewhere. This is particularly important in a world in which data transfers are themselves more and more essential.

Although FIG. **5** depicts the place data in the form of a written address, other ways of depicting place data may be used. For example, the zip code of the location alone may be used for space reasons. Alternatively, any place data, i.e. digital representation of the location where the entry was made, may be used in the initial screen of the digital leg history and then by clicking specifically on that place data the full address may be retrieved.

In a preferred embodiment, by clicking on or otherwise selecting a particular URL depicted in the initial screen **10** of digital leg history **10**, the user immediately is taken to the web site called for. In this way, a person meeting someone new can electronically receive that person’s URL (provided the person is a member of the network at least at some level of privileges), for example using the procedure depicted above and shown in FIG. **2**, and then at any later time go to that person’s web site. The owner of the digital leg history not only has the contact information of the other member at his disposal, but has a simple way to enter the web site of the other individual. It is believed that in the not too distant future this will be particularly useful because it will allow a “world” in which everyone has a web site and people can simply exchange their URLs and invite others to instantly enter their web sites.

It should be understood that the digital leg history **10** will be searchable in a variety of ways for the member. Purely by way of example, software either located in the network device **22** (and forming a part of software **89**) or accessible by the computer that houses the database will allow the member, at the touch of a button to place the entries **20**, **30** in order whether chronologically, by the location of the entry, by the identity of the person or vendor, by data type, etc. This is a searching feature. In a preferred embodiment, unless the user indicates otherwise, the default ordering of entries in digital leg history **10** will be chronological. Preferably, although the user can re-order the entries in leg history **10**, the essence of the digital leg history is a chronological presentation of such entries, because the word “history” in the phrase “digital leg “history” denotes such a chronological ordering.

A person who wishes to access their digital leg history **10** does so, in a preferred embodiment, by accessing database **100** at a web site on the world wide web or other telecommunications network. In an alternative embodiment, the person stores leg history **10** on his own hard drive of any appropriate computer device.

In a further embodiment of the present invention, the entire database **100** may be searchable by a member who has a digital history **10** on the database **100**. A searcher can search for any entry—digital network entry **20** or digital member entry **30**—in database **100** that satisfies a particular time/place characteristic. For example, “Sep. 11, 2001 and New York, N.Y.” might retrieve any entry that was entered into a digital history **10** within database **100** on that date and at that place. In this embodiment, a search engine controlled by the system operating database **100** will perform the searching in accordance with an algorithm provided to it. The time and place characteristics can in certain embodiments also be broader than the entry in the digital history, for example “the week on Sep. 11, 2001 and New York City”. The above database searching can be accomplished due to the fact that database **100** has digital histories **10** whose entries are stamped based not only the time of their entry but

US 10,642,911 B2

15

also based on the place at which that they were entered. Furthermore, the place of entry and the time of entry are separate labels that are independent of the content of the entry itself.

Accordingly, a method is presented of searching a database containing entries having time and place labels or stamps. The database is database **100** representing a collection of digital histories **10** or in certain embodiments is any other database having documents labeled by not just time but also the place at which the data file was entered. Thus, the entry is associated with the time and with the place. The method comprises providing a database of documents, each of said documents having a label, said label indicating a time at which and a place at which the document was entered into said database, (ii) inputting a time and a place as a search term in a search engine algorithm, the search engine algorithm having access to the database and (iii) retrieving search results that correspond to the time and place inputted.

Since the present invention may combine features from different embodiments, it should be also noted that if the store (see FIG. **4**) is a member then as he enters the store his digital camera, cell phone or other electronic device that he registered when he signed up will receive a proposed entry from the store's electronic device pre-positioned at the entrance. However, that would be a digital network entry rather than a digital member entry because it comes from a fellow member and is not unilateral. In the second preferred embodiment, the device **22** held by the member of the network would receive a proposed entry from the store's electronic device at the entrance to the store even though the device **22** itself is not registered with the system, provided the device **22** has software **89** within it. It would then be up to the user to enter authentication data if he wanted to accept the entry and transmit it to the digital leg history **10**. Alternatively, if the user had already entered authentication data prior to entering the premises of the store, he merely has to accept the proposed entry from the store and the entry will be automatically captured and transmitted to the leg history **10** at database **100**.

In another example of a digital member entry **30**, the member takes a snapshot with a digital camera or videos a scene at a park and uploads it to his databank at the system. An hour later he meets with someone and records a snippet of the audio from the meeting. This entry is coded as audio. An hour later he meets a new person at a function and inputs the person's URL which is instantly uploaded to his databank.

In a further preferred embodiment, in the data bank of his leg history for the day, all entries have a time stamp and also have a geographical place stamp because the system makes use of a GPS or other navigational system that is activated at the moment the account holder uploads either a digital network entry **20** or a digital member entry **30** into his databank on the system.

The digital network entries **20** and the digital member entries **30** are automatically transmitted to a database located on a telecommunications network at the time of entry. "At a time of entry" means when the digital network entry **20** or the digital member entry **30** is captured by and entered into the network device **22**, and preferably when these entries are entered into device **22** for the first time. When a person wants to review their digital leg history **10**, they obtain access to the entire digital history for viewing by simply going to the web site of the system and accessing the database, after entry of authentication data.

A further feature of the present invention is that the digital history **10** can be updated by the person at any time by

16

simply adding a digital network entry **20** or a digital member entry **30**. In the system database **100**, there is maintained separate digital leg histories **10A**, **10B**, **10C**, **10D**, etc. for each person who signed up with the system/network. However, in certain preferred embodiments serving public security and/or police functions, the system also has the ability to search the entire database **100** representing a collection of the digital leg histories of a population or of a group of individuals in a particular location, such as a zip code, state or country.

In this patent application the term "sensory images" means audio, visual, olfactory, tactile and/or taste images. The most common sensory images will be visual and the second most common will be audio. Any combination of images are also contemplated such as audio visual images. Furthermore, in this patent application, the term "proximate network device of the person" means a network device of the person that is located proximate to the network device of the member of the network, said member being different than the person (who is also a member of the network). In addition, in this context, the term "proximate" means, in one preferred embodiment and described in claim 1, within sight of one another and preferably also within a short enough range that short-range wireless communication system (purely by way of example, Bluetooth®) function properly. It is contemplated by the present invention that the term proximate can be defined differently so that it can be even closer than "within sight". For example, proximate can be defined to mean within 20 yards and within a short enough range that a short-range wireless communication system can function properly.

Preferably, digital network entries **20** and digital member entries **30** are not work files that reflect work done by a person processing data. Rather, these entries are unprocessed files capturing significant data at a certain time and place. They therefore can be said to contain "experiential" data, in the sense that the data in them relate significantly to the time in which and place at which the data therein was captured or transmitted, and thereby represent a significant experience for the person who entered them into his digital leg history. If this was not the case, the function of providing a nostalgic experience upon review of the digital leg history entries would not be effective.

FIG. **8** also shows an advertisement **333** on blank space on the leg history screen, i.e. the screen displaying the leg history **10**. This is important because the leg histories will have become popular. The advertisement can end up in the leg history **10** in a number of ways. One way is that large companies approach the system owner and offer to place advertisements on digital leg history account holders having a particular profile. Preferably, the profile is a profile of the digital network entries **20** that are comprised of URLs. The content of the URLs in the leg history **10** make it more likely that the advertisement is attractive to the person whose leg history it is. "Attractive" in this context means likely to generate a positive response to the advertisement.

For example, in one embodiment a person whose leg history **10** contains a high preponderance of URLs for airline companies would be served an advertisement from an airline company. Understandably, an airline company would be more interested in having its advertisements appear on the digital history **10** of such a person than on the digital history **10** of a person without a high preponderance of airline URLs.

This requires that the URLs be categorized into topics that define business categories. The system **121** running database **100** would need to do this. One way would be for the

US 10,642,911 B2

17

database to search for well known names of airlines or the URLs of such airline companies throughout the database.

In an alternative embodiment, those business that have provided digital network entries to members of the network as they enter store premises, will have the right to advertise separately in a blank space on the leg history screen.

In certain embodiments, the advertisement appears whenever the member, after providing authentication data, accesses his leg history **10**. In this way, advertisers have a new way of reaching potential purchasers because the leg history represents where the purchasers have been. Using Digital Histories to Improve Search Results

As seen from FIG. 9 and the description herein, a new method that uses digital histories to enhance web searching results is presented. It is a method of searching the Internet or the world wide web using the digital history **10** of the present invention. Algorithms can be easily imagined by those skilled in the art of search engine algorithms that would improve searching. The search engine would be given access to the digital history **10** of the person searching and the digital leg histories of other members in the database **100**. The search engine algorithm would consider the URLs in the digital history of the person doing the searching.

It is noted that when the search engine accesses the database **100** of digital histories, it only looks at the digital network entries **20** and only those that are URLs. Alternatively, it searches all digital network entries **20** and those digital network entries **20** that are not URLs have a URL associated with them. This would be because in this embodiment when a person signs up and provides key data, if the key data **15** is not a URL then the person is either given a URL by the system or provides a pre-existing URL to the system along with or as part of the key data **15**. In this case, when the key data is transmitted and becomes a digital network entry **20**, it has a URL associated with it even if the key data **15** is primarily text. This just means that a search engine will “find” a URL in that digital network entry **20** even though the digital network entry is a poem or text. The text or poem is what the member will see when he accesses and looks through his digital history **10**.

Accordingly, with respect to these methods of using digital histories, it is emphasized that the digital history involved is understood broadly in that it may even be a digital history that only contains digital network entries. Even more broadly, it may be a digital history that only contains URLs.

A method is provided of using a digital history of a person who is a member of a network in searching a database of URLs (i.e. the world wide web, not database **100**) by means of a search algorithm to improve the search result ranking. The algorithm of the search considers a plurality of factors in ranking search results of URLs known to those skilled in the art of search engine algorithms. This assignment of a degree of priority merely adds one additional factor in the collection of factors determining overall priority in the search result ranking.

As shown in FIG. 9, a use of digital histories to perform web searching involves searching for a particular kind of business, for example in a particular geographic area. Suppose a person, Mr. Smith, dines at a particular New York restaurant. Mr. Smith therefore has that restaurant’s URL in his digital history. Mr. Smith is visiting or will visit Texas and needs to locate an appropriate restaurant in Dallas. The idea is that restaurants in Dallas which have been frequented by people who have also dined in the New York restaurant that Mr. Smith frequents are more appealing candidates to be a restaurant suitable for Mr. Smith. The search engine would

18

be given access to the digital history **10** of Mr. Smith who is conducting a search on the search engine and the search engine would also have access to digital histories of others at database **100**. An algorithm, which could be the search engine algorithm or else an algorithm operated by the database **100** and ultimately outputted to the search engine, could identify one or more persons (called “useful persons”) who have a common restaurant URL with Mr. Smith and who also have a restaurant URL for a restaurant in Dallas, the city that Mr. Smith entered in his search. The algorithm would then assign a mathematical priority to such a restaurant. As shown in FIG. 9 the search hit ranking includes the URL in a priority position that it ordinarily would not be located at. FIG. 9 makes use of excerpts of digital histories of the “useful person” and of the “searching person” to illustrate how the method works. These excerpts may take portions of entries from different pages in the digital history **10**.

Accordingly, the following method is presented. A method of using a digital history of a searching person who is a member of a network and who is searching a database of URLs for a certain kind of business in a particular geographic area by means of a search algorithm that considers a plurality of factors in ranking search results of URLs, comprising: (i) providing the search engine algorithm **211** with access to the digital histories of persons who are members of the network, (ii) searching the database of digital histories for URLs to identify a target business of said kind in the particular geographic area wherein a URL **98** of said target business appears in a digital history of a useful person who is a member of the network, the digital history of said useful person also including a URL for a second business of the same kind located in a second geographic area, wherein the searching person has in his digital history the URL of the second business, and (iv) including in the plurality of factors an assignment of priority to the URL of the target business. It is noted that geographic area need not mean a different city.

It is noted as before (in the first use of digital histories for web searching) that when the search engine accesses the database **100** of digital histories, it only looks at the digital network entries **20** and only those that are URLs. Alternatively, it searches all digital network entries **20** and those digital network entries **20** that are not URLs have a URL associated with them. This would be because in this embodiment when a person signs up and provides key data, if the key data **15** is not a URL then the person is either given a URL by the system or provides a pre-existing URL to the system along with or as part of the key data **15**. When the key data is transmitted and becomes a digital network entry **20**, it has a URL associated with it even if the key data **15** is primarily text.

This method requires that the URLs be categorized into topics that define business categories. Either database **100** or the search algorithm would need to do this. In this context the database **100** does not necessarily mean the actual database but rather the system web site **121** running database **100**. It is believed that most search engine algorithms already do this. One possible way of doing this is for the search engine algorithm, for example, Google®, to search the words in the web site of the URL and categorize the URL into topics based on the content of the words in the web site. This would require searching the actual world wide web. Another way is for the URL to be categorized by topic by the member of the network when the URL is entered as key data into database **100**. Another way for the system running database **100** to do this would be for the system **121** to search

US 10,642,911 B2

19

for well known names of businesses of a certain kind or the URLs of such businesses throughout the database. Alternatively, the system **121** could access and use the same method that the search engine algorithms use to categorize such businesses.

More broadly speaking, the method comprises a method wherein a searching person searches a world wide web for a certain kind of business in a particular geographic area using a search algorithm that considers a plurality of factors in ranking search results of URLs, the method comprising (i) providing the search algorithm with access to a database of URLs, said database of URLs incorporating a plurality of personal subcollections of URLs, each of said personal subcollections of URLs including URLs that were transmitted in person to persons who are members of a network and who entered the transmitted URL into a personal subcollection of the member, (ii) searching URLs in said database to identify a target business of said kind in the particular geographic area wherein a URL of said target business appears in a personal subcollection of URLs of a useful person who is a member of the network, the personal subcollection of said useful person also including a URL for a second business of the same kind located in a second geographic area, wherein the searching person has in his personal subcollection of URLs the URL of the second business, and (iii) including in the plurality of factors an assignment of priority to the URL of the target business.

The present invention further contemplates an even broader example of this method applied to web searching (the second kind of use of digital histories in web searching) that is entirely independent of geographic area. For example, a searching person who has a patent attorney and whose patent attorney's URL is listed in the searching person's digital history **10** is now searching for a real estate attorney (the target business) on the world wide web (or on a telecommunications network). There may be a useful person in database **100** of digital histories in relation to this searching person. That is, the useful person would be one who also has the same patent attorney's URL listed in their digital history **10** and who in addition has a real estate attorney whose URL is listed in the useful person's digital history **10**. The searching person would trust that real estate attorney more than another real estate attorney, especially everything else being equal.

Accordingly, the following broader method is presented. A method of using a digital history of a searching person who is a member of a network and who is searching a database of URLs for a first kind of business within a particular topic by means of a search algorithm that considers a plurality of factors in ranking search results of URLs, comprising: (i) providing the search engine algorithm **21** with access to the digital histories of persons who are members of the network, (ii) searching through URLs in the digital histories of the database in order to identify a target business of said first kind wherein a URL **98** of said target business appears in a digital history of a useful person who is a member of the network, the digital history of said useful person also including a URL for a second business of a second kind (but within the same topic), wherein the searching person has in his digital history the URL of the second business, and (iii) including in the plurality of factors an assignment of priority to the URL of the target business. It is noted that "assignment of priority" in this case, as before, merely means that everything else being equal some degree of priority is given in the collection of factors considered by the search algorithm. This assignment of a degree of priority merely adds one additional factor in the collection of factors

20

determining overall priority in the search result ranking. It is further noted that geographic area need not mean a different city.

Again, more broadly speaking the method is presented wherein a searching person searches a world wide web for a certain first kind of business using a search algorithm that considers a plurality of factors in ranking search results of URLs, the method comprising (i) providing the search algorithm with access to a database of URLs, said database of URLs incorporating a plurality of personal subcollections of URLs, each of said personal subcollections of URLs including URLs that were transmitted in person to persons who are members of a network and who entered the transmitted URL into a personal subcollection of the member, (ii) searching URLs in said database to identify a target business of said first kind wherein a URL of said target business appears in a personal subcollection of URLs of a useful person who is a member of the network, the personal subcollection of said useful person also including a URL for a second business of the second kind, wherein the searching person has in his personal subcollection of URLs the URL of the second business, and (iii) including in the plurality of factors an assignment of priority to the URL of the target business.

Alternatively, an even broader example would be where instead of the business of the second kind being within the same geographic area or within the same topic category (attorneys) the method can just call a useful person someone who has any other business whose URL is found in both the searching person's digital history and the useful person's digital history. However, it is believed that the trust level would be reduced. That is, while I might trust the real estate attorney selection of someone who has the same patent attorney as me, I will be somewhat less impressed with the real estate attorney selection of someone who has the same doctor or the same grocery store as me.

The search engine will preferably give also priority based on time in the following sense. We stated that a useful person in database **100** of digital histories in relation to this searching person also has the same patent attorney's URL listed in their digital history **10** and also has a real estate attorney whose URL is listed in the useful person's digital history **10**. If the useful person's selection of the real estate attorney and/or patent attorney was a long time before the searching person is doing his search, it should be given less priority.

Furthermore, the frequency of useful selection may also be considered. If the useful person has even more in common with the searching person, i.e. he has two patent attorneys URLs in his digital history that are in common with the patent attorneys URLs in the searching person's digital history **10**, the useful person's selection of real estate attorney is even more trusted and given more priority in the search ranking.

It can be appreciated from these examples that the method of using digital histories in web searching has countless other applications that differ from the above examples. Accordingly, these examples should be treated as merely illustrative of the concept involved. In addition, all factors used by search engine algorithms today or in the future can be used in the method of the present invention involving using digital histories to improved web searching.

In a further embodiment of the method of the present invention using digital history for enhanced web searching, all digital network entries **20** can be either a URL or would have a URL associated with it. When a person signs up and provides key data **15**, the person also provides a pre-existing URL or is given a new URL by the system.

US 10,642,911 B2

21

It is to be understood that while the method and apparatus of this invention have been described and illustrated in detail, the above-described embodiments are simply illustrative of the principles of the invention. It is to be understood also that various other modifications and changes may be devised by those skilled in the art which will embody the principles of the invention and fall within the spirit and scope thereof. It is not desired to limit the invention to the exact construction and operation shown and described. The spirit and scope of this invention are limited only by the spirit and scope of the following claims.

What is claimed is:

1. A computer-implemented method of enhancing digital search results for a business in a target geographic area using URLs of location histories, comprising:
 - providing, by at least one processing system in communication with a positioning system, an account to (i) an individual member and (ii) a stationary vendor member, of a member network, the account associated with a URL, the individual member's account associated with a mobile communication device or multiple mobile communication devices,
 - maintaining a communication link between the mobile communication device and the at least one processing system or the positioning system such that the mobile communication device is configured to accumulate a location history on a database maintained by the at least one processing system from physical encounters by the individual member at multiple stationary vendor members upon the mobile communication device being set to enter instances of a physical encounter between the individual member carrying the mobile communication device and the stationary vendor member at a physical premises of the stationary vendor member, the positioning system determining a location of the individual member at the physical premises;
 - for each individual member having a location history who sends a search query to a search engine of the at least one processing system, the search query targeting a geographic area:
 - (1) searching, by the search engine, the database for URLs of stationary vendor members in the location history, the location history also identifying time and geographic place of the physical encounters therein, and
 - (2) assigning a priority, by the at least one processing system, in a search result ranking based on an appearance of one of the stationary vendor member URLs in the location history of the individual member, wherein that one of the URLs is of a particular stationary vendor member located in the target geographic area.
2. The method of claim 1, further comprising assigning priority to one of the URLs that satisfies a particular time/place characteristic.
3. The method of claim 2, assigning priority to one of the URLs that satisfies a particular time characteristic.
4. The method of claim 1, further comprising assigning priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic.
5. The method of claim 1, further comprising assigning priority to one of the URLs associated with a location history entry that satisfies a particular time characteristic.
6. The method of claim 1, further comprising assigning the priority to a URL of the stationary vendor member based on the geographic place of the physical encounter.

22

7. The method of claim 1, wherein the geographic location comprises all or part of a physical address of the stationary vendor member.

8. The method of claim 1, further comprising transmitting, by the mobile communication device or a pre-positioned device on the physical premises, a confirmation of the physical encounter to the at least one processing system.

9. The method of claim 1, wherein the stationary vendor member has a pre-positioned wireless device on the physical premises that is configured to communicate with the mobile communication device during the physical encounter.

10. The method of claim 1, wherein the stationary vendor member has a pre-positioned wireless device on the physical premises that is in communication with the positioning system.

11. The method of claim 1, further comprising assigning the priority, by the at least one processing system, in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history.

12. A system of enhancing digital search results for a business in a target geographic area using URLs of location histories, comprising:

at least one processing system in communication with a positioning system and configured to provide an account to (i) an individual member and (ii) a stationary vendor member, of a member network, the account associated with a URL, the individual member's account associated with a mobile communication device or multiple mobile communication devices,

the at least one processing system or the positioning system configured to maintain a communication link with the mobile communication device such that the mobile communication device is configured to accumulate a location history on a database maintained by the at least one processing system from physical encounters by the individual member at multiple stationary vendor members upon the mobile communication device being set to enter instances of a physical encounter between the individual member carrying the mobile communication device and the stationary vendor member at a physical premises of the stationary vendor member, the positioning system determining a location of the individual member at the physical premises, the location history accumulated;

for each individual member having a location history who sends a search query to a search engine accessible by the at least one processing system, the search query targeting a geographic area, the at least one processing system configured to:

- (1) search the database for URLs of stationary vendor members in the location history, the location history also identifying time and geographic place of the physical encounters therein, and
- (2) assign a priority in a search result ranking based on an appearance of one of the stationary vendor member URLs in the location history of the individual member, wherein that one of the URLs is of a particular stationary vendor member located in the target geographic area.

13. The system of claim 12, wherein the at least one processing system is configured to assign priority to one of the URLs that satisfies a particular time/place characteristic.

14. The system of claim 13, wherein the at least one processing system is configured to assign priority to one of the URLs that satisfies a particular time characteristic.

US 10,642,911 B2

23

24

15. The system of claim 12, wherein the at least one processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic.

16. The system of claim 12, wherein the at least one 5 processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time characteristic.

17. The system of claim 12, wherein the at least one 10 processing system is configured to assign the priority to a URL of the stationary vendor member based on the geographic place of the physical encounter.

18. The system of claim 12, wherein the geographic 15 location comprises all or part of a physical address of the stationary vendor member.

19. The system of claim 12, the at least one processing 20 system or the positioning system is configured to receive a transmission, from the mobile communication device or a pre-positioned device on the physical premises confirming the physical encounter.

20. The system of claim 12, wherein the at least one 25 processing system or the positioning system is configured to maintain a communication link with a pre-positioned wireless device on the physical premises of the stationary vendor member, the pre-positioned wireless device configured to 30 communicate with the mobile communication device during the physical encounter.

21. The system of claim 12, wherein the at least one 35 processing system is configured to assign the priority in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history.

* * * * *

EXHIBIT D-1

'911 Patent Claim Chart and Exhibits A-G

| Enhancing digital search results for a business in a target geographic area using URLs of location histories – 10642911 | |
|---|---|
| Patent Claim | Google Product |
| Below is/are non-limiting example(s) of how Google infringes the claim elements of US10642911 | <i>Exhibits taken from Google's public domain</i> |
| <p>1. A computer-implemented method of enhancing digital search results for a business in a target geographic area using URLs of location histories, comprising:</p> <p>providing, by at least one processing system in communication with a positioning system, an account to (i) an individual member and (ii) a stationary vendor member, of a member network, the account associated with a URL, the individual member's account associated with a mobile communication device or multiple mobile communication devices, maintaining a communication link between the mobile communication device and the at least one processing system or the positioning system such that the mobile communication device is configured to accumulate a location history on a database maintained by the at least one processing system from physical encounters by the individual member at multiple stationary vendor members upon the mobile communication device being set to enter instances of a physical encounter between the individual member carrying the mobile communication device and the stationary vendor member at a physical premises of the stationary vendor member, the positioning system determining a location of the individual member at the physical premises;</p> <p>for each individual member having a location history who sends a search query to a search engine of the at least one processing system, the search query targeting a geographic area:</p> <p>(1) searching, by the search engine, the database for URLs of stationary vendor members in the location history, the location</p> | <p>Google Search, also referred to as Google Web Search or simply Google, is a computer-implemented method of providing search results including results for businesses developed by Google.</p> <p>Googles provides accounts to an individual member and to a stationary vendor member of a member network of googles account (users) members as follows;</p> <p>The stationary member account is currently called “Google My Business”. This is a free add-on to all google accounts (users). It provides a profile (aka knowledge panel) that contains a stationary vendor information, and is integrated with Google Maps. See Exhibit A.</p> <p>Google Maps provides to each individual Google member (user) a URL of an account page with account information.</p> <p>Google stores the location history of the individual members in their system database in order to be able to provide ranking search results to the individual member based on the location history of the member see Exhibits B, C</p> |

| | |
|---|---|
| history also identifying time and geographic place of the physical encounters therein, and (2) assigning a priority, by the at least one processing system, in a search result ranking based on an appearance of one of the stationary vendor member URLs in the location history of the individual member, wherein that one of the URLs is of a particular stationary vendor member located in the target geographic area. | |
| 2. The method of claim 1, further comprising assigning priority to one of the URLs that satisfies a particular time/place characteristic. | Google relies heavily on location services, meaning that your search results will generally reflect the location settings on the device you are using. If you search “plumber,” the first listing returned will likely be a plumber close to you see Exhibit D |
| 3. The method of claim 2, assigning priority to one of the URLs that satisfies a particular time characteristic. | Google bases their search results based on time characteristics of search for example if a store is closed at the time of search google will rank it after the open stores See Exhibit F and G |
| 4. The method of claim 1, further comprising assigning priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic. | Googles search results to the individual member based on the location history of the member see Exhibits B, and C. |
| 5. The method of claim 1, further comprising assigning priority to one of the URLs associated with a location history entry that satisfies a particular time characteristic. | Google bases their search results based on time characteristics of search for example if a store is closed at the time of search google will rank it after the open stores See Exhibit F and G |
| 6. The method of claim 1, further comprising assigning the priority to a URL of the stationary vendor member based on the geographic place of the physical encounter. | Googles search results to the individual member based on the location history of the member see Exhibits B and C. |

| | |
|---|--|
| <p>7. The method of claim 1, wherein the geographic location comprises all or part of a physical address of the stationary vendor member.</p> | <p>Googles search results to the individual member based on the location history of the member see Exhibits B and C.</p> |
| <p>8. The method of claim 1, further comprising transmitting, by the mobile communication device or a pre-positioned device on the physical premises, a confirmation of the physical encounter to the at least one processing system.</p> | <p>The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E.</p> |
| <p>9. The method of claim 1, wherein the stationary vendor member has a pre-positioned wireless device on the physical premises that is configured to communicate with the mobile communication device during the physical encounter.</p> | <p>The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E</p> |
| <p>10. The method of claim 1, wherein the stationary vendor member has a pre-positioned wireless device on the physical premises that is in communication with the positioning system.</p> | <p>The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the</p> |

| | |
|---|--|
| | <p>members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E.</p> |
| <p>11. The method of claim 1, further comprising assigning the priority, by the at least one processing system, in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history.</p> | <p>Googles search results to the individual member based on the location history of the member see Exhibits B and C.</p> |
| <p>12. A system of enhancing digital search results for a business in a target geographic area using URLs of location histories, comprising: at least one processing system in communication with a positioning system and configured to provide an account to (i) an individual member and (ii) a stationary vendor member, of a member network, the account associated with a URL, the individual member's account associated with a mobile communication device or multiple mobile communication devices, the at least one processing system or the positioning system configured to maintain a communication link with the mobile communication device such that the mobile communication device is configured to accumulate a location history on a database maintained by the at least one processing system from physical encounters by the individual member at multiple stationary vendor members upon the mobile communication device being set to enter instances of a physical encounter between the individual member carrying the mobile communication device and the stationary vendor member at a physical premises of the stationary vendor member, the positioning system determining a location of the</p> | <p>Google Search, also referred to as Google Web Search or simply Google, is a computer-implemented method of providing search results including results for businesses developed by Google.</p> <p>Googles provides accounts to an individual member and to a stationary vendor member of a member network of googles account (users) members as follows;</p> <p>The stationary member account is currently called “Google My Business”. This is a free add-on to all google accounts (users). It provides a profile (aka knowledge panel) that contains a stationary vendor information, and is integrated with Google Maps. See Exhibit A.</p> <p>Google Maps provides to each individual Google member (user) a URL of an account page with account information.</p> |

| | |
|--|--|
| <p>individual member at the physical premises, the location history accumulated; for each individual member having a location history who sends a search query to a search engine accessible by the at least one processing system, the search query targeting a geographic area, the at least one processing system configured to:</p> <p>(1) search the database for URLs of stationary vendor members in the location history, the location history also identifying time and geographic place of the physical encounters therein, and</p> <p>(2) assign a priority in a search result ranking based on an appearance of one of the stationary vendor member URLs in the location history of the individual member, wherein that one of the URLs is of a particular stationary vendor member located in the target geographic area.</p> | <p>Google stores the location history of the individual members in their system database in order to be able to provide ranking search results to the individual member based on the location history of the member see Exhibits B and C.</p> |
| <p>13. The system of claim 12, wherein the at least one processing system is configured to assign priority to one of the URLs that satisfies a particular time/place characteristic.</p> | <p>Google relies heavily on location services, meaning that your search results will generally reflect the location settings on the device you are using. If you search “plumber,” the first listing returned will likely be a plumber close to you see Exhibit D</p> |
| <p>14. The system of claim 13, wherein the at least one processing system is configured to assign priority to one of the URLs that satisfies a particular time characteristic.</p> | <p>Google bases their search results based on time characteristics of search for example if a store is closed at the time of search google will rank it after the open stores</p> <p>See Exhibit F and G</p> |
| <p>15. The system of claim 12, wherein the at least one processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic.</p> | <p>Googles search results to the individual member based on the location history of the member see Exhibits B and C.</p> |
| <p>16. The system of claim 12, wherein the at least one processing system is configured to assign priority to one of the URLs associated</p> | <p>Google bases their search results based on time characteristics of search for example if a store is closed</p> |

| | |
|---|--|
| with a location history entry that satisfies a particular time characteristic. | at the time of search google will rank it after the open stores See Exhibit F and G |
| 17. The system of claim 12, wherein the at least one processing system is configured to assign the priority to a URL of the stationary vendor member based on the geographic place of the physical encounter. 18. The system of claim 12, wherein the geographic location comprises all or part of a physical address of the stationary vendor member. | The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E |
| 19. The system of claim 12, the at least one processing system or the positioning system is configured to receive a transmission, from the mobile communication device or a pre-positioned device on the physical premises confirming the physical encounter. | The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E |
| 20. The system of claim 12, wherein the at least one processing system or the positioning system is configured to maintain a communication link with a pre-positioned wireless device on the physical premises of the stationary vendor member, the pre- | The App utilizes devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi, Bluetooth technology, and other sensors) |

| | |
|---|---|
| <p>positioned wireless device configured to communicate with the mobile communication device during the physical encounter.</p> | <p>to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E</p> |
| <p>21. The system of claim 12, wherein the at least one processing system is configured to assign the priority in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history.</p> | <p>The App utilizes the devices built in Global Positioning Systems (GPS) and utilizes device's shortrange capabilities (Wifi and Bluetooth technology, and other sensors) to know the position of the members location and recognize instances of a physical encounter between the individual member and the stationary vendor member at a physical premises of the stationary vendor member. See Exhibit E</p> |
| | |

10642911 Exhibits

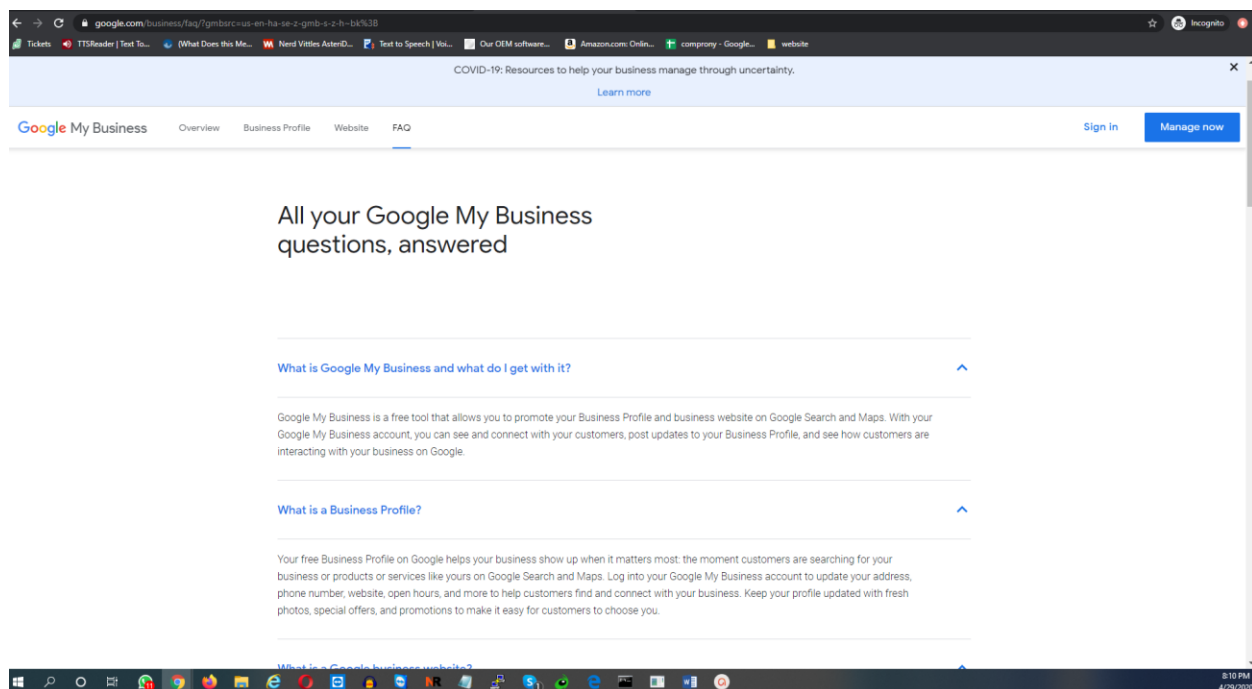
Exhibit A:*Claims of US10642911:*

"A computer-implemented method of enhancing digital search results for a business in a target geographic area using URLs of location histories, comprising:

providing, by at least one processing system in communication with a positioning system, an account to (i) an individual member and (ii) a stationary vendor member, of a member network, the account associated with a URL, the individual member's account associated with a mobile communication device or multiple mobile communication devices,

maintaining a communication link between the mobile communication device and the at least one processing system or the positioning system such that the mobile communication device is configured to accumulate a location history on a database maintained by the at least one processing system from physical encounters by the individual member at multiple stationary vendor members

<https://www.google.com/business/faq/?gmbsrc=us-en-ha-se-z-gmb-s-z-h~bk%3B>



All your Google My Business questions, answered

- [What is Google My Business and what do I get with it?](#)

Google My Business is a free tool that allows you to promote your Business Profile and business website on Google Search and Maps. With your Google My Business account, you can see and connect with your customers, post updates to your Business Profile, and see how customers are interacting with your business on Google.

- [What is a Business Profile?](#)

Your free Business Profile on Google helps your business show up when it matters most: the moment customers are searching for your business or products or services like yours on Google Search and Maps. Log into your Google My Business account to update your address, phone number, website, open hours, and more to help customers find and connect with your business. Keep your profile updated with fresh photos, special offers, and promotions to make it easy for customers to choose you.

10642911

Exhibit B:

Claims of US10642911:

"for each individual member having a location history who sends a search query to a search engine of the at least one processing system, the search query targeting a geographic area: (1) searching, by the search engine, the database for URLs of stationary vendor members in the location history, the location history also identifying time and geographic place of the physical encounters therein, and (2) assigning a priority, by the at least one processing system, in a search result ranking based on an appearance of one of the stationary vendor member URLs in the location history of the individual member, wherein that one of the URLs is of a particular stationary vendor member located in the target geographic area"

<https://support.google.com/maps/answer/7677966?co=GENIE.Platform%3DAndroid&hl=en>

Find places you'll like

As you use Google Maps more often, you'll see matches for various places. These matches show how well a place matches your preferences.

How to get matches

To see your matches, you need to:

- [Sign in to your account](#)
- [Turn on Web & App Activity](#)

Note: If you don't see your matches or they're not very accurate, you may need to rate places and set your preferences (see below).

How matches are created

Your matches show how well different places fit with your preferences. They're unique to you and improve over time. Matches are based on:

- Any dietary restrictions or cuisines that you list in your preferences
- The types of cuisine and restaurants you typically visit or avoid
- Whether you've saved, rated, or visited a place or somewhere similar
- [Your interactions with places on Google Maps](#) or Google Search

How ratings affect your matches

When you rate and review places in Google Maps, you give us a better idea of the places you like. The more you rate places, the more accurate your matches will be.

Android Computer iPhone & iPad





Improve your matches

[Your matches are based on your Google Location History](#) and Web & App Activity, which includes your Google searches. To make your matches more accurate, follow these steps:

Turn on Location History

Learn how to [manage your Location History](#).

Update your preferences

1. On your Android phone or tablet, open the Google Maps app.
2. Tap Account Circle  > Settings .
3. Under "Exploring places," tap **Food & drink preferences**.
4. Choose your dietary preferences (such as vegetarian, gluten-free, or alcohol-free).
5. Choose your cuisine or interests.
6. To list more items, under "Interested" or "Less interested," tap Add  > an option  **Add preferences**.

Rate more places

Learn how to [review places you've visited in Google Maps](#).

Add places as favorites

The more places you save as favorites, the more accurate your matches will be.

Learn how to [save places you like in Google Maps](#).

Clear your feedback about places

To remove places from your "Interested" or "Not Interested" lists:




1. On your Android phone or tablet, open the Google Maps app .
2. Tap Account Circle  > Settings .
3. Tap **Exploring places** > **Your feedback about places**.
4. Next to the place you want to remove, tap Clear .

Exhibit B:

Claims of US10642911:

“further comprising assigning priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic”

“further comprising assigning the priority to a URL of the stationary vendor member based on the geographic place of the physical encounter”

“wherein the geographic location comprises all or part of a physical address of the stationary vendor member.”

“further comprising assigning the priority, by the at least one processing system, in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history”

https://en.wikipedia.org/wiki/Google_Personalized_Search#cite_note-colborn-14

Google Personalized Search

From Wikipedia, the free encyclopedia

[Jump to navigation](#)[Jump to search](#)

Google Personalized Search is a [personalized search](#) feature of [Google Search](#), introduced in 2004. All searches on Google Search are associated with a [browser cookie](#) record.^[1] When a user performs a search, the search results are not only based on the relevance of each [web page](#) to the search term, but also on which websites the user (or someone else using the same [browser](#)) visited through previous search results.^[1] This provides a more personalized experience that can increase the relevance of the search results for the particular user. Such filtering may also have side effects, such as the creation of a [filter bubble](#).

Changes in Google's search algorithm in later years put less importance on user data, which means the impact of personalized search is limited on search results. Acting on criticism, Google has also made it possible to turn off the feature.



Contents

- 1History
- 2Data collection
 - 2.1Types of data collected
 - 2.1.1Location data

- 2.1.2Search history
- 2.1.3Web history
- 2.1.4Social networks
- 3Effectiveness
- 4Reception
- 5See also
- 6References

History^[edit]

Personalized Search was originally introduced on March 29, 2004 as a beta test of a [Google Labs](#) project.^[2] On April 20, 2005, it was made available as a non-beta service, but still separate from ordinary Google Search.^{[3][4]} On November 11, 2005, it became a part of the normal Google Search, but only to users with [Google Accounts](#).^[5]

Beginning on December 4, 2009, Personalized Search was applied to all users of Google Search, including those who are not logged into a Google Account.^[1]

In addition to customizing results based on personal behavior and interests associated with a Google Account, Google also implemented social search results in October 2009^[6] based on people whom one knows. Operating on the assumption that one's associates share similar interests, these results would give a ranking boost to sites from within a user's "Social Circle". These two services integrated into regular results by February 2011 and expanded results by including content shared to users known through social networks.^[7]

Data collection^[edit]

Google's search algorithm is driven by collecting and storing web history in its databases. For non-authenticated users Google looks at anonymously stored [browser cookies](#) on a user's browser and compares the unique string with those stored within Google databases. Google accounts logged into [Google Chrome](#) use user's web history to learn what sites and content you like and base the search results presented on them. Using the data provided by the user Google constructs a profile including gender, age, languages, and interests based on prior behaviour using Google services.^[8]

When a user performs a search using Google, the keywords or terms are used to generate ranked results based upon the [PageRank](#) algorithm. This algorithm, according to Google, is their "system of counting link votes and determining which pages are most important based upon them. These scores are then used along with many other things to determine if a page will rank well in a search." "PageRank relies on the uniquely democratic nature of the web by using its vast link structure as an indicator of an individual page's value. In essence, Google interprets a link from page A to page B as a vote, by page A, for page B. But, Google looks at considerably more than the sheer volume of votes, or links a page receives; for example, it also analyzes the page that casts the vote. Votes cast by pages that are themselves "important" weigh more heavily and help to make other pages 'important.' Using these and other factors, Google provides its views on the pages' relative importance,"^[9]

Since the search division launched the very first version with customized search results in 2005 and began to give consideration to previously visited sites, new factors have been added to refine search results. According to Google, the conclusion they have made after many years of testing, the incomparably best indicator for deciding which results are relevant to the user is the search phrase itself - not user data - and that personalisation of search results is not as big a factor as it used to be.^[10]

Harvard law professor [Jonathan Zittrain](#) disputed the extent to which personalization filters distort Google search results, saying that "the effects of search personalization have been light".^[11] Further, Google provides the ability for users to shut off personalization features if they choose,^[12] by deleting Google's record of their search history and setting Google to not remember their search keywords and visited links in the future.

Types of data collected^[edit]

There are 50+ factors (called 'signals' by Google) used to determine search results. **The top factors in personalizing search results are:**

- **Location**
- Search History
- Web History
- Social Networks

Each of these variables will factor into the personalization of a user's search results in hopes of quickly providing the most relevant results to the user to answer whatever question is being asked.^[13]

Location data^[edit]

Location data allows Google to provide information based upon current location and places that the user has visited in the past, based upon GPS location from an Android smartphone or the user's IP address. Google uses this location data to provide local listings grouped with search results using the [Google Local](#) platform featuring detailed reviews and ratings from [Zagat](#).^[14]

Exhibit C:

Claims of US10642911:

“further comprising assigning the priority, by the at least one processing system, in the search result ranking based on a frequency of the appearance of the one of the stationary vendor member URLs in the location history”

“wherein the at least one processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time/place characteristic”

<https://www.portent.com/blog/seo/personalized-search-results.htm>

Guide to Personalized Search Results

BY PORTENT TEAM / AUGUST 28 2014

If you grew up watching Sesame Street like me, you might have heard this song:

One of these things is not like the others,
One of these things just doesn't belong,
Can you tell which thing is not like the others
By the time I finish my song?

The search results that you see within your browser are not the same as the others, each person is seeing different results. This is because those magic elves that place links on Google's results pages knows that not everyone is that same and they customize your search results to better fit your needs. These personalized searches are created by multiple factors and from these sources, Google provides you with more relevant searches and gets you to the page you are looking for.

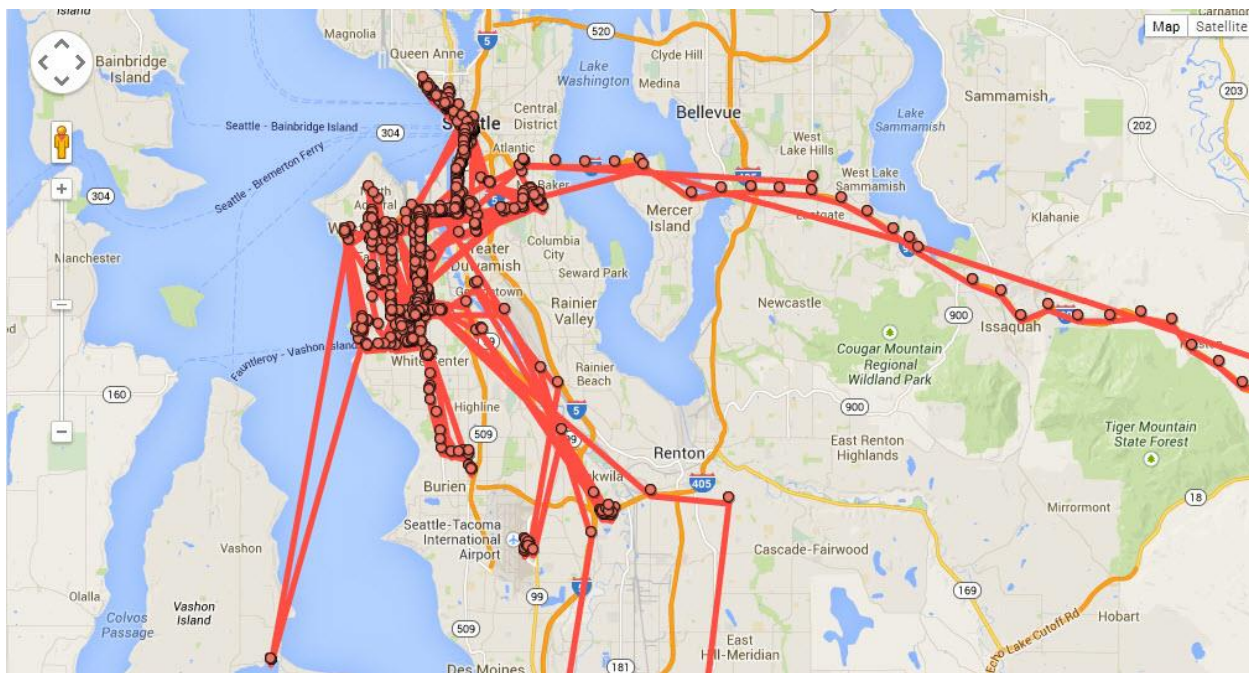
What affects my search results?

There are many factors that go into personalizing your search results, but here are some of the top ones:

Location

Google knows where you sleep. They also know where you work, go to school, and where you go on your weekends.

Don't believe me? Take a look at this:



This is the location data Google has collected on me for the past 30 days.

Of course, I have an Android phone and take Google everywhere I go, but have a look here and find out if Google already knows what you did last weekend:

<https://maps.google.com/locationhistory/b/0>

This precise location data allows Google to give you information based on your current location as well as the places you have visited in the past.

If you are not connected to Google via a mobile device, it will get your location based off your IP address of your internet connection. It may not be as precise as GPC, but it gives them the general area you are located.

This location data is used to help you find information on nearby restaurants or other local businesses. These custom results are very helpful to the user, but in my tests they caused the biggest fluctuation of the rankings.

Exhibit D:

Claims of US10642911:

“further comprising assigning priority to one of the URLs that satisfies a particular time/place characteristic”

“wherein the at least one processing system is configured to assign priority to one of the URLs that satisfies a particular time/place characteristic”

<https://obrienmedia.co.uk/blog/5-reasons-google-search-results-may-vary-dramatically-even-for-identical-searches>



Chris O'Brien [September 25, 2017](#) A 4 Minute Read

Like many people you may be a regular Google search user. Over time you may have noticed a strange phenomenon: Google search results vary, even on the same device, using the same browser and using the same keyword phrase or search term.

Users who are not well-versed in Google's mysterious and ever-changing search algorithm may attribute this to simple error. However, these changes are actually quite intentional. While occasionally inconvenient for users, these search results variations can prove much more problematic for businesses and marketers.

Searchers logged into Google accounts may see slightly different results based on their past search history and the geographic location they have saved in their Google account – e.g. searchers who have a Google account registered to a Swindon postal address will see Swindon based businesses above non-Swindon based businesses in most cases.

What causes Google's search results to change?

The answer to this question, unfortunately, is not quite as straightforward as most searchers, marketers and business owners would like. There are many different elements that determine what the results from a Google search displays, including:

- The type of device used for the search (desktop, laptop, phone, tablet),
- Your geographic location
- What type of browser you are using
- The number of Google-generated ads on the page
- What type of search you are doing
- Your personal search history
- Whether you are logged in to a Google Account while searching
- The phase of the moon (not really, but with Google you never know).

Here is more information on five known factors that can play a large role in the results Google returns for your searches.



1. Previously Clicked Google Links

If you've searched Google using the same keywords and phrases, and repeatedly clicked on specific [links](#) from the results Google returned your results will start to change. Pages that you visited from the links in the results Google returned will start to show up more and more in your results, frequently moving higher on the page and occasionally creating a false impression that a website page is ranked higher than it actually is.

Want to try it for yourself? Google a phrase, then select a link on page two. Repeat the action a few or perhaps several times. You may be surprised how quickly that link will make its way up the rankings on your specific computer, tablet or smartphone. However, this will only be true for your searches, on your computer or smartphone, using the same web browser.

2. Your Geographic Location

Google relies heavily on location services, meaning that your search results will generally reflect the location settings on the device you are using. If you search "plumber," the first listing returned will likely be a plumber close to you. This can be a benefit for local businesses who are only seeking customers in close proximity, but can stymie national firms working to achieve broader visibility.

The next time you go on vacation or travel out of town give it a shot. Do a Google search for the keywords you usually use to reach your company's page or other common searches that you do and see how much the results change

from what you normally see. The farther you travel the more pronounced the differences are likely to be.

3. Google Account Use

Millions of people have Google accounts, using them to access Gmail, Google Drive, Google Voice, and dozens of other related services. A Google account can be used simultaneously on multiple devices, creating a large web of user data that Google can collect and use to refine search parameters for a given Google account.

If you are logged into your Google account while doing a search on Google this store of data will be used by Google to help refine your search based on past behavior. If you want to experiment for yourself, search for something common that you research frequently, and then log out of your account and search again. In many instances your Google search results will vary.

4. The Device Used For Searching

Google changes its algorithms hundreds of times over the course of a year, but only few are significant enough to warrant warning. Google Panda was one such change, in which mobile rankings were altered to put responsive and other mobile web design strategies higher than sites with only desktop pages.

This change mainly effected how website performed on mobile devices such as tablets and smartphones. If you have a great website without a mobile alternative or a responsive design, your Google ranking will more than likely vary from device to device, and often not in your favor on mobile devices.

5. The Type of Search You Perform

As is to be expected, what you're searching for will have a big effect on what results you end up with. If your keywords include products that are commonly shopped for online, your results may include more shopping links and results for e-commerce pages.

Exhibit E

Claim:

“further comprising transmitting, by the mobile communication device or a pre-positioned device on the physical premises, a confirmation of the physical encounter to the at least one processing system”

“wherein the stationary vendor member has a pre-positioned wireless device on the physical premises that is configured to communicate with the mobile communication device during the physical encounter”

wherein the at least one processing system or the positioning system is configured to maintain a communication link with a pre-positioned wireless device on the physical premises of the stationary vendor member, the pre-positioned wireless device configured to communicate with the mobile communication device during the physical encounter

<https://support.google.com/accounts/answer/3467281?hl=en>

Help your phone get a more accurate location (Google Location Services a.k.a. Google Location Accuracy)

Turn your phone's location accuracy on or off

1. Open your device's Settings app.
2. Tap Location.
 - If you don't see "Location," [follow the steps for older Android versions](#).
3. Tap Advanced > Google Location Accuracy.
4. Turn Improve Location Accuracy on or off.

When Google Location Accuracy is on

When you have Google Location Accuracy turned on, your phone uses these sources to get the most accurate location:

- GPS
- Wi-Fi
- Mobile networks
- Sensors

When Google Location Accuracy is off

Let your phone scan for nearby networks or devices

To help apps get better location info, you can let your phone scan for nearby Wi-Fi access points or Bluetooth devices.

1. Open your device's Settings app.
2. Tap Location.
 - If you don't see "Location," follow the steps for older Android versions.
3. Tap Wi-Fi and Bluetooth scanning.
4. Turn Wi-Fi scanning or Bluetooth scanning on or off.

The screenshot shows a web browser window displaying a Google Support article. The address bar shows the URL: support.google.com/accounts/answer/3467281?hl=en. The page title is "Manage your Android device's location settings".

Manage your Android device's location settings

When you have location turned on for your phone, you can get info based on its location, like commute predictions, nearby restaurants, and local search results.

When an app is using your phone's location via GPS, the top of your screen shows Location.

Important: Some of these steps work only on Android 10 and up. [Learn how to check your Android version.](#)

Understand the location settings available on your phone

Important: When you turn off location for your phone, apps and services will not be able to get your phone's location. But you could still get local results and ads based on your IP address.

Google has a number of location-based services, including:

- **Location Accuracy for your Android device (a.k.a. Google Location Services)**
To get a more accurate location for your phone, [learn how to turn on Location Accuracy](#).
- **Location History for your Google Account**
To see and manage the places your phone has been, [learn how to turn on Location History](#).
- **Location Sharing for Google Maps**
To let others see where your phone is, [learn how to share your real-time location via Google Maps](#).

Tip: Apps have their own settings. [Learn how to manage app location settings.](#)

Turn location on or off for your phone

1. Open your phone's Settings app.
2. Tap Location.
 - If you don't see "Location," [follow the steps for older Android versions.](#)
3. At the top, turn location on or off.

Tip: You can also turn your phone's location on or off with Quick Settings. [Learn about Quick Settings.](#)

When Location is on

When Location is off

Help your phone get a more accurate location (Google Location Services a.k.a. Google Location Accuracy)

Turn your phone's location accuracy on or off

1. Open your device's Settings app.
2. Tap Location.
 - If you don't see "Location," [follow the steps for older Android versions.](#)
3. Tap Advanced > Google Location Accuracy.
4. Turn Improve Location Accuracy on or off.

When Google Location Accuracy is on

When you have Google Location Accuracy turned on, your phone uses these sources to get the most accurate location:

- GPS
- Wi-Fi
- Mobile networks
- Sensors

Manage your location

- Manage your Location History
- Manage your Location History for iPhone & iPad
- Manage your Android device's location settings
- Choose which apps use your Android phone's location
- Manage your Location Sharing settings

The bottom of the page shows a Windows taskbar with various application icons and a system clock indicating 9:19 PM on 4/29/2020.

Exhibit F:

Claim:

"assigning priority to one of the URLs that satisfies a particular time characteristic"

"wherein the at least one processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time characteristic"

"wherein the at least one processing system or the positioning system is configured to maintain a communication link with a pre-positioned wireless device on the physical premises of the stationary vendor member, the pre-positioned wireless device configured to communicate with the mobile communication device during the physical encounter"

<https://www.socialmediatoday.com/news/google-updates-featured-snippets-to-factor-in-query-timeliness/560068/>

Google Updates Featured Snippets to Factor in Query Timeliness

AUTHOR

Andrew.Hutchinson@adhutchinson

PUBLISHED

Aug. 2, 2019

Are Google's featured snippets a good or a bad thing for marketers and brands?

On one hand, they're functional - as [Google explains](#):

"We display featured snippets when our systems determine this format will help people more easily discover what they're seeking, both from the description about the page and when they click on the link to read the page itself. They're especially helpful for those on mobile or searching by voice."

Yet on the other, with all that additional information within the SERP, featured snippets also lessen the users' need to click through to your page. That could result in less traffic, less opportunity to showcase your promotions, and less opportunity to convert more broadly.

So while, as Google notes, featured snippets may come in handy for mobile and search users - both of which are on the rise - they're maybe not so good for website owners. Maybe.

6 Ways Self-Service Kiosks Enhance the Customer Experience

Explore how retailers are utilizing digital self-service kiosks to drive more traffic and improve customer experience across the board.

Regardless, this week Google has announced a new update which will improve its systems' understanding of the types of information that remain useful over time, and become out-of-date more quickly - with a specific focus on featured snippets.

"For queries where fresh information is important, our systems will try to find the most useful and up-to-date featured snippets."

For example, Google says that when people search for something like "income brackets," it's very likely that they're looking for this year's tax information, not last year's:

income brackets

All Images News Shopping Videos More Settings Tools

About 43,800,000 results (0.33 seconds)

The New 2019 Federal Income Tax Brackets & Rates

| Tax Bracket / Filing Status | Single | Married Filing Separately |
|-----------------------------|-----------------------|---------------------------|
| 10% | \$0 to \$9,700 | \$0 to \$9,700 |
| 12% | \$9,701 to \$39,475 | \$9,701 to \$39,475 |
| 22% | \$39,476 to \$84,200 | \$39,476 to \$84,200 |
| 24% | \$84,201 to \$160,725 | \$84,201 to \$160,725 |

3 more rows • Dec 5, 2018

The New 2019 Federal Income Tax Brackets And Rates - Forbes
<https://www.forbes.com/sites/jrose/2018/12/05/tax-brackets-and-rates-2019/>

by percentage for classes tax rates by age middle class

About this result Feedback

That featured snippet post would be out of date after this year's tax period, and Google's updated system will now be able to better understand and identify queries where the timeliness of the information is important, and display aligning featured snippets accordingly.

Here's another example, showing how the featured snippet changes as the relevant information evolves:

So what does that mean for your content? Well that depends.

It's hard to predict what Google's system will select as the featured snippet, but ranking high for a direct result can be good for branding, and, potentially, for driving traffic. But as noted, it may also not be a great traffic driver - if you're covering timely content, and you have an opportunity to rank high for related searches, then really, all this means is that your pages *might* show up for timely search queries.

Will that help you drive more traffic? It's hard to say, but regardless, it's worth noting the change in Google's system, which will look to highlight more timely, relevant content in search results.

Exhibit G:

Claim:

“assigning priority to one of the URLs that satisfies a particular time characteristic”

“wherein the at least one processing system is configured to assign priority to one of the URLs associated with a location history entry that satisfies a particular time characteristic”

“wherein the at least one processing system or the positioning system is configured to maintain a communication link with a pre-positioned wireless device on the physical premises of the stationary vendor member, the pre-positioned wireless device configured to communicate with the mobile communication device during the physical encounter”

Google shows the open stores based on the time of the search

